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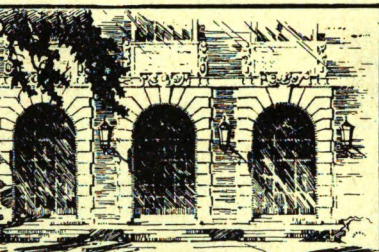
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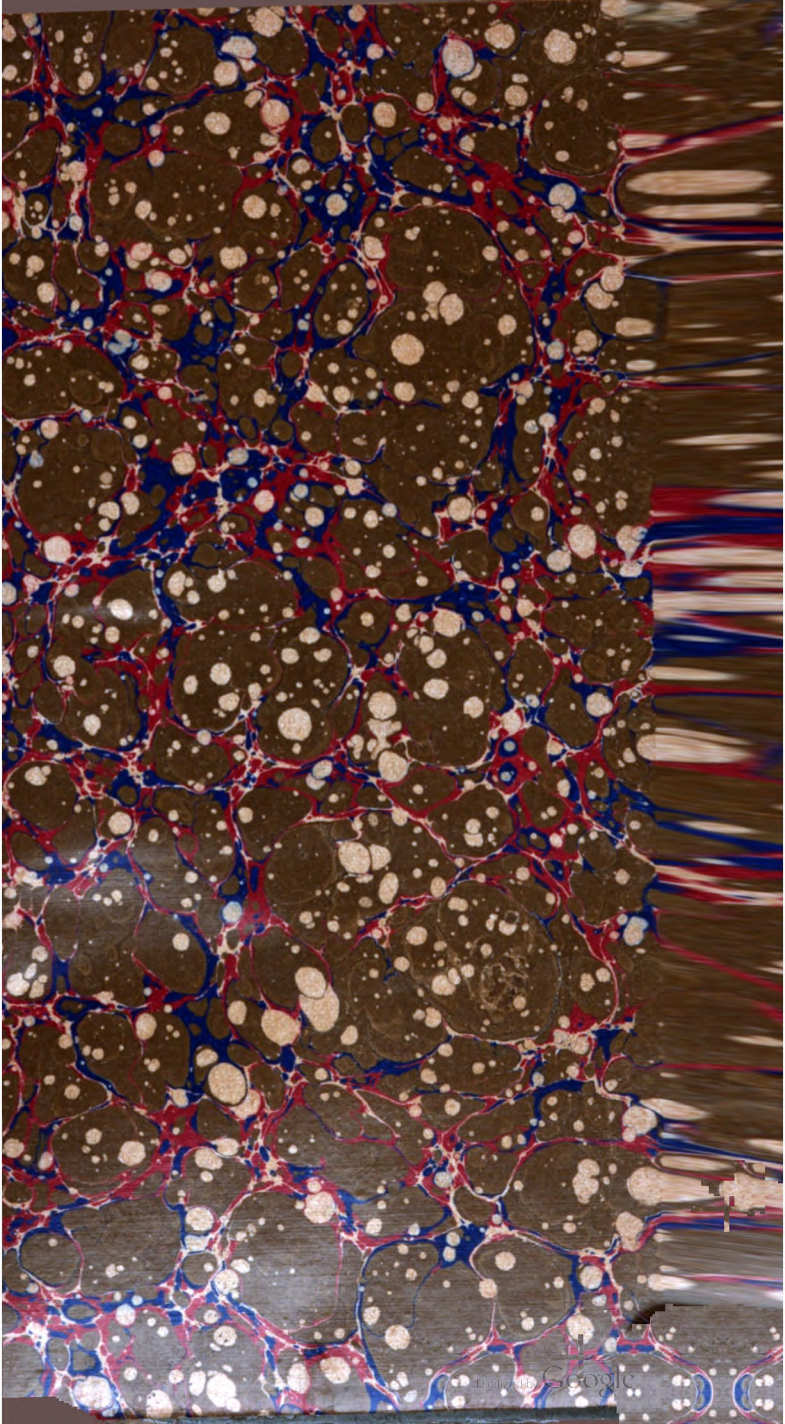
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ALDEN'S
MANIFOLD CYCLOPEDIA

OF
KNOWLEDGE AND LANGUAGE.

WITH ILLUSTRATIONS.

VOL. 1.
A TO AMERICA.

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THE MANIFOLD CYCLOPEDIA undertakes to present a survey of the entire circle of knowledge, whether of words or of things, thus combining the characteristics of a Cyclopaedia and a Dictionary, including in its vocabulary every word which has any claim to a place in the English language. It does not especially attempt originality of treatment, but aims rather to give the generally accepted views of the most eminent scholars of the world upon all topics discussed. With a view to securing the most perfect utility, the large type, narrow page (for the sake of ease for the eye), and small, handy form of volume are adopted; the many thousands of illustrations which are inserted *in the text* are selected with great care, the sole consideration being the aid they give in illustrating the subjects treated.

Every new Cyclopaedia is necessarily based largely upon similar compilations which have preceded it. Availing themselves most of the labors of their predecessors who, in their estimation, have accomplished the best results, the editors of the MANIFOLD CYCLOPEDIA have drawn more largely from Chambers's than from any other Cyclopaedia, and more largely from Stormonth's Unabridged than from any other Dictionary. Chambers's has long been an acknowledged model for a Cyclopaedia, but, being of foreign authorship, it is naturally adapted to England rather than to America; Stormonth is recognized as an authority not inferior to Webster, Worcester, the Imperial, and Murray, and in the combined qualities of conciseness, clearness, and accuracy is believed to be without a rival; and is conspicuously defective only in the one point of its following English rules and customs rather than American. Neither of these, nor any other authorities, however, are blindly followed, but effort is carefully made to bring all matters of importance to the generally accepted standard of the most eminent American scholarship. While attempt is not made to add new words or titles simply for the sake of being able to claim multiplicity of them, pains have been taken to bring the work fully abreast of the times.

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SCHEME OF SOUND SYMBOLS

FOR THE PRONUNCIATION OF WORDS.

Note.—(·) is the mark dividing words respelt phonetically into syllables; (ˈ), the accent indicating on which syllable or syllables the accent or stress of the voice is to be placed.

Sound-symbols employed in Respelling.	Representing the Sounds as exemplified in the Words.	Words respelt with Sound-symbols and Marks for Pronunciation.
ā	mate, fate, fail, aye	māt, fāt, fāl, ā.
ă	mat, fat	māt, fāt.
ā	far, calm, father	fār, kām, fā thēr.
ā	care, fair	cār, fār.
aw	fall, laud, law	faul, lawd, law.
ē	mete, meat, feet, free	mēt, mēt, fēt, frē.
ě	met, bed	mēt, bēd.
é	her, stir, heard, cur	hēr, stēr, hērd, kēr.
ī	pine, ply, height	pīn, plī, hīt.
ī	pin, nymph, ability	pīn, nīm̃f, ā-bīl'ĩ-tĩ.
ō	note, toll, soul	nōt, tōl, sōl.
ō	not, plot	nōt, plōt.
ō	move, smooth	mōv, smōth.
ō	Goethe (similar to e in her)	gō'tēh.
ow	noun, bough, cow	noun, bow, kow.
oy	boy, boil	boy, boyl.
ū	pure, dew, few	pūr, dū, fū.
ú	bud, come, tough	būd, kūm, tūf.
ú	full, push, good	fúl, pūsh, gúd.
ü	French plume, Scotch guid	plüm, güd.
ch	chair, match	chār, mäch.
ch	German buch, Heidelberg	bóch, hī dēl-bēr̃ch, löch.
	Scotch loch (guttural)	bóch, hī dēl-bēr̃ch, löch.
g	game, go, gun	gām, gō, gūn.
j	judge, gem, gin	jūj, jēm, jīn.
k	king, cat, cot, cut	kīng, kūt, kōt, kūt.
s	sit, scene, cell, city, cypress	sīt, sēn, sēl, sīt'ĩ, sī prēs.
sh	shun, ambition	shūn, ām-bīsh'ūn.
th	thing, breath	thīng, brēth.
th	though, breathe	thō, brēth.
z	zeal, maze, muse	zēl, māz, mūz.
zh	azure, vision	āzh'er, vīzh'ūn.

ABBREVIATIONS USED IN THIS WORK.

a., or adj.....	adjective.	B	Britannic.
A. B.....	Bachelor of Arts.	b.....	born.
abbr.....	abbreviation, abbrevi- ated.	Ba.....	Barium.
abl.....	ablative.	Bart	Baronet.
Abp.....	Archbishop.	Bav	Bavarian dialect.
abt.....	about.	bl., bbl.....	barrel, barrels.
Acad	Academy.	B. C.....	before Christ.
acc.....	accusative.	B. C. L....	Bachelor of Civil Law.
act....	active.	B. D.....	Bachelor of Divinity.
A. D.....	in the year of our Lord.	bef.....	before.
ad. or adv.....	adverb.	Belg.....	Belgic.
aft.....	after.	Bl.	Bismuth.
Adj.....	Adjutant.	biog.....	biography, biograph- ical.
Adm.....	Admiral.	biol.....	biology.
Ag.....	Silver (Argentum).	B. L.....	Bachelor of Laws.
agri.....	agriculture.	Bohem.	Bohemian.
Al.....	Aluminium.	bot.....	botany, botanical.
Ala.....	Alabama.	Bp.....	Bishop.
alg.....	algebra.	Br.....	Bromine.
A. M.....	before noon.	Braz.....	Brazilian.
A. M.....	Master of Arts.	Brig	Brigadier.
Am.....	Amos.	Brit.....	British, Britannica.
Amer.....	America, American.	bro.....	brother.
anat.....	anatomy, anatomical.	Bulg.....	Bulgarian.
anc.....	ancient, anciently.	bush.....	bushel, bushels.
An. M.....	in the year of the world.	C.....	Carbon.
anon.....	anonymous.	c.....	century.
antiq.....	antiquity, antiqui- ties.	c.....	city.
aor.....	aorist, aoristic.	Ca.....	Calcium.
Apr.....	April.	Cal.....	California.
Ar.....	Arabic.	Camb.....	Cambridge.
arch.....	architecture.	Can.....	Canada.
archæol...	archæology.	Cant.....	Canterbury.
arith.....	arithmetic.	cap.....	capital.
Ark.....	Arkansas.	Capt.....	Captain.
art.....	article.	Card.	Cardinal.
artil.....	artillery.	carp.....	carpentry.
AS. or A. Sax.	Anglo-Saxon.	Catal.....	Catalonian.
As.....	Arsenic.	Cath.....	Catholic.
Assoc.....	Association.	caus.....	causative.
asst.....	assistant.	cav.....	cavalry.
astrol.....	astrology.	Cd.....	Cadmium.
astron.....	astronomy.	Ce.....	Cerium.
attor.....	attorney.	Celt.....	Celtic.
at. wt.....	atomic weight.	Chal.....	Chaldee.
Au.....	Gold (Aurum).	chem.....	chemistry, chemical
A. U. C.....	in the year from the building of Rome.	chh.....	church.
Aug.....	August.	Chin.....	Chinese.
aug.....	augmentative.	Chron.....	Chronicles.
Aust.....	Austrian.	chron.....	chronology.
A. V.....	authorized version (of Bible), 1611.	Cl.....	Chlorine.
avoid.....	avoidupois.	Class.....	Classical (= Greek and Latin).
B.....	Boron.	Co.....	Cobalt.
		Co.....	Company.
		co.....	county.
		cog.....	cognate, cognate with.

ABBREVIATIONS.

Col.....Colonel.
 Col.....Colossians.
 Coll.....College.
 colloq.....colloquial.
 Colo.....Colorado.
 Com.....Commodore.
 com.....commerce.
 comp.....compare.
 compar.....comparative.
 conch.....conchology.
 cong.....congress.
 Congl.....Congregational.
 conj.....conjunction.
 Conn.....Connecticut.
 contr.....contraction, con-
 tracted.
 Cop.....Coptic.
 Cor.....Corinthians.
 corr.....corresponding.
 Corn.....Cornish.
 Cr.....Chromium.
 crystal.....crystallography.
 Cs.....Cæsium.
 ct.....cent.
 Cu.....Copper (Cuprum).
 cwt.....a hundred weight.
 Cyc.....Cyclopædia.
 Cym.....Cymric.
 D.....Didymium.
 D. or Dut.....Dutch.
 d.....died.
 d. (l. s. d.).....penny, pence.
 Dak.....Dakota.
 Dan.....Daniel.
 Dan.....Danish.
 dat.....dative.
 dau.....daughter.
 D. C.....District of Columbia
 D. C. L.....Doctor of Civil (or
 Common) Law.
 D. D.....Doctor of Divinity.
 Dec.....December.
 dec.....declension.
 def.....definite, definition.
 deg.....degree, degrees.
 Del.....Delaware.
 Del.....Delegate, Delegates
 Dem.....Democratic.
 Dep.....Deputy, Deputies.
 dep.....deponent.
 dept.....department.
 deriv.....derivation, deriva-
 tive.
 Deut.....Deuteronomy.
 dial.....dialect, dialectic.
 diam.....diameter.
 Dic.....Dictionary.
 dim.....diminutive.
 dist.....district.
 distrib.....distributive.
 div.....division.
 doz.....dozen.
 Dr.....Doctor.
 dr.....dram, drams.
 dram.....drama, dramatic.
 dwt.....pennyweight.
 dyn.....dynamics.
 E.....Erbium.
 e.....east, eastern.
 E., Eng.....English.
 Eccl.....Ecclesiastes.
 eccles.....ecclesiastical.
 ed.....edited, edition, edi-
 tor.

e.g.....for example.
 Egypt.....Egyptian.
 elect.....electricity.
 Emp.....Emperor.
 Encyc.....Encyclopædia.
 engin.....engineering.
 engr.....engraving.
 entom.....entomology.
 env. ext.....envoy extraordi-
 nary.
 ep.....epistle.
 Eph.....Ephesians.
 Epis.....Episcopal.
 eq.....equal, equals.
 equiv.....equivalent.
 Est.....Esther.
 estab.....established.
 etc.....and others like.
 Eth.....Ethiopic.
 ethn.....ethnography, eth-
 nology.
 et seq.....and the following.
 etym.....etymology.
 Eur.....European.
 Ex.....Exodus.
 exclam.....exclamation.
 Ezek.....Ezekiel.
 Ezr.....Ezra.
 F.....Fluorine.
 f.....father.
 Fahr.....Fahrenheit.
 Fe.....Iron (Ferrum).
 Feb.....February.
 fem.....feminine.
 fig.....figure, figuratively.
 Finn.....Finnish.
 Fl.....Flemish.
 Fla.....Florida.
 for.....foreign.
 fort.....fortification.
 Fr.....French.
 fr.....from.
 freq.....frequentative.
 Fris.....Frisian.
 ft.....foot, feet.
 fut.....future.
 G.....Glucinium.
 Ga.....Gallium.
 Gael.....Gaelic.
 Gal.....Galatians.
 gal.....gallon.
 galv.....galvanism, galvanic
 Gen.....General.
 Gen.....Genesis.
 gen. or
 genit.....genitive.
 Geo.....Georgia.
 geog.....geography.
 geol.....geology.
 geom.....geometry.
 Ger.....German.
 Goth.....Gothic.
 Gov.....Governor.
 govt.....government.
 Gr.....Grand.
 Gr.....Greek.
 gr.....grain, grains.
 gram.....grammar.
 H.....Hydrogen.
 h.....hour, hours.
 Hab.....Habakkuk.
 Hag.....Haggai.
 H. B. M.....His (or Her) Britan-
 nic Majesty.

ABBREVIATIONS.

Heb	Hebrew, Hebrews.	L. G.	Low German.
her	heraldry.	Lieut.	Lieutenant.
Hg.	Mercury, Hydrargyrum.	Linn	Linnæus, Linnæus.
hhd.	hoghead, hog-heads.	lit.	literal, literally.
Hind.	Hindustanee, Hindu, or Hindi.	Lith.	Lithuanian.
hist	history, historical.	L. L.	Late Latin, Low Latin.
Hon	Honorable.	LL.D.	Doctor of Laws.
hort.	horticulture.	lon	longitude.
Hos.	Hosea.	M.	Monsieur.
Hung.	Hungarian.	m.	mile, miles.
hydros.	hydrostatics.	M. A.	Master of Arts.
I.	Iodine.	Macc.	Maccabees.
I., Is	Island, Islands.	mach.	machinery.
i., or intran.	intransitive.	Mag.	Magazine.
Icel.	Icelandic.	Maj.	Major.
ich.	ichthyology.	Mal.	Malachi.
Ida	Idaho.	manuf.	manufactures.
i e.	that is.	Mar.	March.
Ill.	Illinois.	masc.	masculine.
illus.	illustration.	Mass.	Massachusetts.
Imp.	Imperial.	math	mathematics, mathematical.
imper.	imperative.	Matt.	Matthew.
imperf.	imperfect.	M. D.	Doctor of Medicine.
impers.	impersonal.	Md.	Maryland.
In	Indium.	Me.	Maine.
in	inch, inches.	mech.	mechanics, mechanical.
incept.	inceptive.	med	medicine, medical.
Ind.	Indiana.	Med. L.	Mediæval Latin.
ind.	indicative.	mem.	member.
indef.	indefinite.	mensur.	mensuration.
Indo-Eur.	Indo-European.	Messrs. or	
inf.	infantry.	MM.	Gentlemen, Sirs.
inf.	infinitive.	metal.	metallurgy.
int.	interest.	metaph.	metaphysics, metaphysical.
intens.	intensive.	meteor.	meteorology.
interj.	interjection.	Meth.	Methodist.
introd.	introduction.	Mex.	Mexican.
Io.	Iowa.	Mg.	Magnesium.
Ir.	Iridium.	M. H. G.	Middle High German.
Ir.	Irish.	Mic.	Micah.
Iran.	Iranian.	Mich.	Michigan.
irr.	irregular.	mid.	middle (voice).
Is.	Isalah.	milit.	military.
It.	Italian.	min.	minute, minutes.
Jan.	January.	mineral.	mineralogy.
Jas.	James.	Minn.	Minnesota.
Jer.	Jeremiah.	Min. Plen.	Minister Plenipotentiary.
Jn.	John.	Miss.	Mississippi.
Josh.	Joshua.	Mile.	Mademoiselle.
Jr.	Junior.	Mme.	Madam.
Judg.	Judges.	Mn.	Manganese.
Jul.	July.	Mo.	Missouri.
K.	Potassium (Kalium).	Mo.	Molybdenum.
K.	Kings (in Bible).	mod.	modern.
k.	king.	Mont.	Montana.
Kan.	Kansas.	Mr.	Master (Mister).
Kt.	Knight.	Mrs.	Mistress (Missis).
Ky.	Kentucky.	MS., MSS.	Manuscript, Manuscripts.
L.	Latin.	Mt.	Mount, mountain.
L.	Lithium.	mus.	music.
l. (l. s. d.)	pound, pounds (sterling).	Mus. Doc.	Doctor of Music.
La.	Lanthanium.	myth.	mythology, mythological.
La.	Louisiana.	N.	Nitrogen.
Lam.	Lamentations.	N.	Norse, Norwegian.
lang.	language.	n.	north, northern, northward.
lat.	latitude.		
lb., lb.	pound, pounds (weight).		
Lett.	Lettish.		
Lev.	Levitical.		

ABBREVIATIONS.

n.....noun.
Na.....Sodium (Natrium).
Nah.....Nahum.
nat.....natural.
naut.....nautical.
navig.....navigation.
Nb.....Niobium.
N. Car.....North Carolina.
Neb.....Nebraska.
neg.....negative.
Neh.....Nehemiah.
neut.....neuter.
Nev.....Nevada.
N. Ham.....New Hampshire.
N. H. G... New High German.
Ni.....Nickel.
N. Jer.....New Jersey.
N. Mex.....New Mexico.
N. T., or
 N. Test.... New Testament.
N. Y.....New York.
nom.....nominative.
Norm.....Norman.
North. E... Northern English.
Nov.....November.
Num.....Numbers.
numis.....numismatics.
O.....Ohio.
O.....Oxygen.
Obad.....Obadiah.
obj.....objective.
obs., or †... obsolete.
obsoles.....obsolescent.
O. Bulg.....Old Bulgarian.
Oct.....October.
OE.....Old English.
OF, or O. Fr. Old French.
O. H. G.... Old High German.
Ont.....Ontario.
O. Prus.....Old Prussian.
Or.....Oregon.
ord.....ordnance.
orig.....original.
ornith.....ornithology.
Os.....Osmium.
O. Sax.....Old Saxon.
O. T., or
 O. Test.... Old Testament.
Oxf.....Oxford.
oz.....ounce, ounces.
P.....Phosphorus.
p., pp.....page, pages.
p., or part... participle.
paleon.....paleontology.
parl.....parliament.
pass.....passive.
pathol.....pathology.
Pb.....Lead (Plumbum).
Pd.....Palladium.
pejor.....pejorative.
Penn.....Pennsylvania.
Per.....Persic or Persian.
perf.....perfect.
pers.....person.
persp.....perspective.
Peruv.....Peruvian.
Pet.....Peter.
Pg.....Portuguese.
phar.....pharmacy.
Ph.D.....Doctor of Philosophy.
Phil.....Philippians.
Philem.....Philemon.

philol philology, philo-
 logical.
philos. philosophy, philo-
 sophical.
Phen.....Phœnician.
photog.....photography.
phren.....phrenology.
phys.....physical, physiology
physiol.....physiology, physi-
 ological.
Pl. Plate.
pl. plural.
Pl. D.....Platt Deutsch.
plupf.....pluperfect.
P. M.....after noon.
pneum.....pneumatics.
P. O.....Post Office.
poet.....poetical.
Pol.....Polish.
pol. econ... political economy.
pop. population.
poss.....possessive.
pp.....pages.
pp.....past participle.
p. pr.....present participle.
Pr.....Provençal.
prep.....preposition.
Presb.....Presbyterian.
Pres.....President.
pres.....present.
pret.....preterite.
prim.....primitive.
priv.....privative.
prob.....probably.
Prof.....Professor.
pro.....pronoun.
pron.....pronunciation, pro-
 nounced.
pros. prosody.
Prov.....Proverbs.
prov.....province, or provin-
 cial.
Ps.....Psalm, Psalms.
psychol.....psychology.
pt. pint.
Pt.....Platinum.
pub.....published, publish-
 er.
pwt.....pennyweight.
Q.....Quebec.
qt. quart.
qtr. quarter (28 lbs.).
qu.....querry.
R.....Rhodium.
r., or riv... river.
Rb.....Rubidium
q.v.....which see.
Rom. Cath.. Roman Catholic.
rec. sec.... recording secretary
Ref.....Reformed.
refl.....reflex.
reg.....regular.
rel. pro.... relative pronoun.
rep.....representation.
Rev.....Revelation.
Rev.....Reverend.
Rev. V.....Revised Version.
rhet.....rhetoric, rhetorical.
R. I. Rhode Island.
Rom.....Roman, Romans.
r.r. railroad.
Rt.....Right.
Ru.....Ruthenium.
Rus.....Russian.

ABBREVIATIONS.

r.w.....railway.
 S.....Sulphur.
 s.....second, seconds.
 s.....shilling, shillings.
 S. or s.....south, southern,
 southward.
 Sam.....Samuel.
 Sax.....Saxon.
 Sb.....Antimony (Stibi-
 um).
 Sc.....Scotch.
 Scand.....Scandinavian.
 S. Car.....South Carolina.
 scr.....scruple, scruples.
 Scrip.....Scripture, Scriptu-
 ral.
 sculp.....sculpture.
 Se.....Selenium.
 sec.....secretary.
 sec.....section.
 Sem.....Semitic.
 Sep.....September.
 Serv.....Servian.
 Si.....Silicon.
 sing.....singular.
 sis.....sister.
 Skr.....Sanskrit.
 Slav.....Slavonic, Slavic.
 Sn.....Tin (Stannum).
 Soc.....Society.
 Song Sol... Song of Solomon.
 Sp.....Spanish.
 sp. gr.....specific gravity.
 sq.....square.
 Sr.....Senior.
 Sr.....Strontium.
 St.....Saint.
 st.....street.
 stat.....statute.
 S. T. D.....Doctor of Sacred
 Theology.
 subj.....subjunctive.
 suf.....suffix.
 superl.....superlative.
 Supp.....Supplement.
 Supt.....Superintendent.
 surg.....surgery, surgical.
 Surv.....surveying.
 Sw.....Swedish.
 sym.....symbol.
 syn.....synonym.
 Syr.....Syriac.
 t.....town.
 tr.....transitive.
 Ta.....Tantalum.
 Tart.....Tartar.
 Te.....Tellurium.
 technol.....technology.

teleg.....telegraphy.
 Tenn.....Tennessee.
 terr.....territory.
 term.....termination.
 Teut.....Teutonic.
 Tex.....Texas.
 Th.....Thorium.
 theol.....theology, theolog-
 ical.
 Thess.....Thessalonians.
 Ti.....Titanium.
 Tim.....Timothy.
 Tit.....Titus.
 Tl.....Thallium.
 toxicol.....toxicology.
 trigon.....trigonometry.
 Turk.....Turkish.
 typog.....typography, typo-
 graphical.
 U.....Uranium.
 Unit.....Unitarian.
 Univ.....Universalist.
 Univ.....University.
 U. Presb... United Presbyteri
 an.
 U. S.....United States.
 Ut.....Utah.
 V.....Vanadium.
 v.....verb.
 Va.....Virginia.
 var.....variety (of species).
 Vt.....Vermont.
 v. i.....verb intransitive.
 vill.....village.
 viz.....namely.
 v. n.....verb neuter.
 voc.....vocative.
 vol.....volume.
 vols.....volunteers.
 v. tr.....verb transitive.
 W.....Tungsten (Wolf-
 ram).
 W.....Welsh.
 w.....west, western,
 westward.
 Wash.....Washington.
 Wis.....Wisconsin.
 wt.....weight.
 W. Va.....West Virginia.
 Wyo.....Wyoming.
 Y.....Yttrium.
 yd.....yard.
 yr.....year.
 Zech.....Zechariah.
 Zeph.....Zephaniah.
 Zn.....Zinc.
 zool.....zoology, zoological.
 Zr.....Zirconium.

ALDEN'S MANIFOLD CYCLOPEDIA.

A, a: the first letter in almost all alphabets; the only exceptions, perhaps, are the Ethiopian, where it stands thirteenth, and the Runic, in which the order is altogether different (see **RUNES**). **A** has in English at least four distinct sounds, as heard in *ale, man, father, all*. Of these, the third may be considered its primitive and proper sound; it is its name-sound in perhaps all languages except English, and is that which is assigned to it in comparative grammar. This sound is the purest and fullest in human speech; it is that which the child learns first and most easily to produce, and its sign stands as if by right at the head of the alphabet. In the oldest languages it is the predominating vowel, and gives them their peculiar fulness and strength. Philologists consider it the *heaviest* of the three fundamental vowels; the other two, *i* and *u* (whose primitive and proper sounds are heard in *me* and *do*), seem to have arisen out of *a*, by lightening or weakening it (Lat. *cadence*—*incidence, calco*—*inculco*). By combining with these, *a* gives rise to *ai, au*, which in their turn coalesce into *ê* and *ô*.—In the Phœnician alphabet the letter **A** bears the name of *aleph*; i.e., ‘ox,’ with reference to its most ancient form, which rudely represented an ox’s head. From this came the Greek name *alpha*. For engraving or tracing on stone or other hard materials, characters composed of straight lines are best adapted, and such was naturally the earliest form of **A** and the other letters. It is easy to trace the growth of our small *a* or *a* out of the monumental **A**. In Greek and Roman inscriptions executed hastily or carelessly the form

A is often found; and this, written with a flexible reed, became rounded into **A**.—For **A** and the other letters as

abbreviations, see **ABBREVIATIONS**.

A, an adjective of number, signifying one: the indefinite article used before adjectives or nouns that begin with a consonant or with the sound of a consonant.

A, in composition: an Anglo Saxon prefix signifying *at, to, in, or on*: a Greek prefix, with its form **AN**, signifying *without, not*: a Latin prefix, with its forms **AB** and **ABS**, signifying *from or away*.

A, a note in Music: the major sixth of the scale of **C**

A 1—AA.

major. When perfectly in tune to C, it stands in the proportion of $\frac{3}{2}$ of 1. But in this state it would not be a fifth to D, the second note of the scale of C, being a comma too flat, which difference is as 80 to 81. The ear being sensibly offended with this deficiency, the note A is therefore made the least degree higher than perfect—namely, $1\frac{1}{8}\frac{1}{8}$, by which the advantage is gained that A is a fifth above D ($1\frac{1}{4}$), or deficient only in the proportion of $1\frac{1}{8}\frac{1}{8}$ —a deficiency so trifling that the ear accepts the fifth, D, A, and the sixth, C, A, as perfect, although, mathematically calculated, the one is too great and the other too small.—For A Major and A Minor, see KEY.

A 1: a symbol by which first-class vessels are known in Lloyd's Register of British and Foreign Shipping (q. v.), and by which the operations of shippers of goods and insurers are governed. Surveyors appointed by the society examine all vessels in course of building, with a view to ascertaining their character, and inscribing them accordingly in the register. A designates the character of the hull of the vessel; the figure 1, the efficient state of her anchors, cables, and stores; when these are insufficient, in quantity or quality, the figure 2 is used. The character A is assigned to a new ship for a certain number of years, varying from four to fifteen, according to the material and mode of building, but on condition of the vessel being statedly surveyed, to see that the efficiency is maintained. A vessel built under a roof is allowed an additional year on that account. An additional period of one year, and, in certain cases, of two years, is allowed also to vessels whose decks, outside planking, etc., are fastened in a specified way. After the original period has elapsed, the character A may be 'continued' or 'restored' for a time (1-8 years), on condition of certain specified repairs.—When a vessel has passed the age for the character A, but is still found fit for conveying perishable goods to all parts of the world, it is registered A in red. (The symbol for this class was formerly Æ asterisk in red.)—Ships Æ in black form the third class, and consist of such as are still found, on survey, fit to carry perishable goods on shorter voyages.—Classes E and I comprise ships sufficient to convey goods not liable to sea-damage; the one class for voyages of any length, the other for shorter voyages.

AA: name of a number of rivers and streams in the n. of France, Holland, Germany, and Switzerland. As many as forty have been enumerated. The word is said to be of Celtic origin, but it is allied to the Old German *aha*, Gothic *ahva*, identical with the Latin *aqua*, 'water.' Ach or Aach is another form of the same word. Four streams of the name of Ach fall into the Lake of Constance. The word, in both forms, occurs as final syllable in many names of places, as, Fulda (formerly Fuldaha), Biberach, Biberich, etc. In the plural, it is Aachen (waters, springs), which is the German name of Aix-la-Chapelle (q. v.) Aix, the French name of so many places connected with springs, is derived from Lat. *Aquæ*, which became in old French *Aigues*, and then Aix. Compare the Celtic Esk, Ex, Axe, Ouse.

AACHEN—ABACK.

AACHEN : see **AIX-LA-CHAPELLE**.

AALBORG, *aul'börg* (Eel town) : a seaport in the n. of Jutland, with considerable trade; pop. (1880) 14,152.

AALST, *alst* : town in Belgium ; see **ALOST**.

AAR, *är*, next to the Rhine and Rhone, largest river in Switzerland: rises in the glaciers near the Grimsel in Berne, forms the Falls of Handeck, 200 ft. high, flows through Lakes Brienz and Thun, and passing the towns of Interlaken, Thun, Berne, Solothurn, Aarau, Brugg, and Klingenstein, joins the Rhine at the village of Coblenz, in Aargau, after a course of nearly 200 m. It is a beautiful crystal stream, and, though rapid, is navigable for small-craft from Lake Thun. There are several small rivers of the same name in Germany.

AARGAU, *är'gow*, or **ARGOVIE**, *är-gō-vē'* : a canton of Switzerland, on the Aar, and having the Rhine for its n. boundary. Its surface is diversified, well wooded, and generally fertile. Area, about 580 sq. m.; pop. (1880) 198,645, rather more than half being Protestants. Besides agriculture, there are considerable manufactures of cotton and silk, and prosperity has of late markedly increased. In this canton is the castle of Habsburg or Hapsburg, original seat of the imperial family of Austria. The chief town is **AARAU**, situated on the Aar; pop. (1880) 5,944.

AARHUUS, *ör'hūs* : seaport on the e. coast of Jutland, and seat of a bishop; pop. (1880) 24,831.

AARON, *är'ön*, elder brother of Moses : was appointed his assistant and spokesman, and at the giving of the Mosaic law received for himself and his descendants the hereditary dignity of the priesthood. Aaron assisted his brother in the administration of affairs. He died in the 123d year of his age, on Mount Hor, on the borders of Idumea. His third son, Eleazar, succeeded him in the office of high-priest.

AARONIC, a. *ä-rön'ik*, or **AARONICAL**, a. *ä-rön'i-käl* : of or pertaining to Aaron or his priesthood. **AARON'S ROD**, in Arch., a rod with one serpent twining around it, as distinguished from *Mercury's rod*, which has two. **AARON'S SERPENT**, a figure expressive of some combination or power so irresistible as to break down or swallow up all opposing interests or powers.

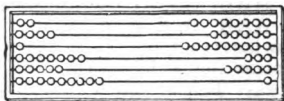
ABACA, n. *äb'ä-kä* : the fibre of a species of plantain or banana (*Musa troglodytarum*), native of the Philippine Isles, where it is extensively cultivated. The leaf-stalks are split into long stripes, and the fibrous part is then separated from the fleshy pulp. A laborer can in this way produce daily 50 lbs. of hemp. Before 1825, the quantity produced was insignificant, but now it amounts to nearly 31,000 tons annually. In Manila there is a steam rope-work for making ropes of it for naval purposes. They are very durable, but not very flexible.—The fibre of a number of species of *Musa* is used in tropical countries. See **PLANTAIN**.

ABACK, ad. *ä-bäck'* [**AS.** *on-bæc*] : on the back; backwards, as used by sailors; towards the mast; by surprise; unexpectedly.

ABACO—ABANDON.

ABACO . see **BAHAMAS**.

ABACUS, n. *ăb'ă-kūs*, **AB'ACUSES**, n. plu. *-kūs-ēs* [L. *ăb-ăcus*; Gr. *abaks*, a board for calculations]: a counting frame; an instrument seldom seen except in infant-schools, where it is used to make the elementary operations of arithmetic palpable. It consists of a frame with a number of parallel wires, on which beads or counters are strung. In ancient times, it was used in practical reckoning, and is said to be so still in China and elsewhere.—*Abacus Pythagoricus* meant the multiplication-table.



Abacus for Calculations.

ABACUS, in Arch.: a square or oblong level tablet on the capital of a column, and supporting the entablature. In the Doric, old Ionic, and Tuscan orders, the abacus is a regular oblong; but in the



Corinthian Abacus.

new Ionic, Corinthian, and Roman orders, the abacus has concave sides, with truncated angles. Square marble tablets let into walls, and fields with figures in them inserted in mosaic floors, were also included under the term abacus in ancient architecture.

ABAD, *ă-bād'* (allied both in etymology and meaning to the Eng. *abode*): an affix to names of Persian origin, as *Hyder-abad*, the 'dwelling' or city of Hyder.

ABADDON, n. *ă-băd'dŏn* [Heb. *abad*, to be lost or destroyed]: the destroying angel of the bottomless pit. See **APOLLYON**.

ABAF, ad. prep. *ă-băft'* [AS. *a*, on, and *baft*—for *bi-aft*, by-aft; *be-æftan*, by-behind; *æftan*, after, behind; *bæfta*, the back]: a seaman's term; at or towards the stern or hinder part of a ship; behind.

ABAISSE, *a-bās-sā* (lowered): in Heraldry. When the fesse, or any other armorial figure is depressed, or situated below the centre of the shield, it is said to be *abaissé*. *Adossé* (back to back), *affronté* or *confronté* (facing or fronting one another), *aiguissé* (sharpened at the point), *ailé* (winged), are other heraldic terms borrowed, like *abaissé*, from the French, and used by English heralds in senses not differing essentially from their ordinary significations in French.

ABAND, v. *ă-bănd'*, for *abandon* in OE.

ABANDON, v. *ă-băn'dŭn* [F. *abandonner*, to desert; *abandon*, a giving up; OF. *à bandon*, at his own pleasure; mid. L. *bandum*, an order or decree]: to give up; to desert; to forsake entirely. **ABAN'DONING**, imp. **ABAN'DONED**, pp. *-dŭnd*: **ADJ.** wholly forsaken; given up; extremely profligate or corrupt. **ABAN'DONMENT**, n. a giving up; a total desertion. **ABAN'DONER**, n. the person who gives up. **AN**

ABANDON—ABATE.

ABANDONED CHARACTER, one wholly enslaved to vice.—**SYN.** of 'abandon': to yield; give up; surrender; cede; forego; quit; relinquish; desert; forsake; resign; abdicate; renounce; withdraw from; leave; retire. **SYN.** of 'abandoned': deserted; forsaken; profligate; vicious; corrupt; vile; odious; detestable; heinous; reprobate; wicked; criminal; depraved; abject; forlorn; destitute; derelict.

ABANDON, *n.* *ă-băng'đống* [*F.*—see preceding title]: a complete giving up; complete absorption in some pursuit or condition of mind; disregard of appearances or usual restraints.

ABANDON, **ABANDONING**, **ABANDONMENT**, in Law: (*Contracts.*) In insurances, abandonment is the act by which the insured relinquishes to the assurer all the property in the thing insured. The act must be performed within reasonable time after the loss, must be explicit and absolute, and must set forth the reasons upon which it is founded. Abandonment may be made when there is total loss, when the voyage is not worth pursuing on account of a peril provided against in the insurance, if the cargo be so damaged as to be of little or no value, where the salvage is very high, and further expense being necessary the insurer will not engage to bear it, or if what is saved is of less value than the freight, etc. (*Rights.*) Legal rights, when once vested, must be divested according to law, but equitable rights may be abandoned: a mill-site, once occupied, may be abandoned; so may an application for land, an improvement, and a trust fund. (*For torts.*) The owner of an animal is answerable for any damage that it may cause; but if the animal be lost, or have strayed for more than a day, he may discharge himself from this responsibility by abandoning the animal to the person who has sustained the injury—except in the case of a dangerous, or noxious animal. (*Malicious.*) The act of a husband or wife who leaves his or her consort wilfully and with an intention of causing perpetual separation. When continued the length of time prescribed by the local statutes, this is cause for divorce.

ABASE, *v.* *ă-bās'* [*F.* *abaissér*, to lower—from mid. *L.* *abāssārē*, to lower—from mid. *L.* *ad*, to; *bassus*, lowest]: to lower or depress; to bring low; to degrade; to cast down. **ABA'SING**, *imp.* **ABASED**, *pp.* *ă-bās't'*. **ABASEMENT**, *n.* the act of humbling or bringing low.—**SYN.** of 'abase': to bring low; degrade; depress; humble; cast down; debase.

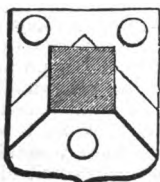
ABASH, *v.* *ă-bāsh'* [*OF.* *esbahir*, to set agape, to confound: *Wall.* *esbarwi*, to astonish—from *barwi*, to look at with open mouth]: to put to confusion from any strong emotion; to confuse with guilt; to make ashamed. **ABASH'ING**, *imp.* **ABASHED**, *pp.* *ă-bāsh't'*, confounded; put to silence. **ABASHMENT**, *n.* confusion from shame.—**SYN.** of 'abash': to confound; confuse; disconcert; shame.

ABATE, *v.* *ă-bāt'* [*OF.* *à batre*; *F.* *abattre*, to beat down: mid. *L.* and *It.* *abbāttērē*, to overthrow—from *ab*, from; mid. *L.* *bāttērē*; *OF.* *batre*, to beat]: to beat down; to lessen; to lower in price; to grow or become lower or less; to subside. **ABA'TING**, *imp.* **ABA'TED**, *pp.* **ABATABLE**, *a.* *ă-bā'tū-bl*,

ABATEMENT—ABATIS.

that can be lessened or abated. **ABATEMENT**, n. a reduction; a lessening; the sum abated. **ABATER**, n. the person or thing that abates.—**SYN.** of 'abate': to lessen; decrease; subside; diminish; decline; intermit.

ABATEMENT, in Heraldry: a mark placed over a portion of the paternal coat-of-arms of a family, significative of some base or ungentleman-like act on the part of the bearer. The coat is then said to be abated, or lowered in dignity. Guillim gives nine such marks, all of which are either of one



Abatement.

or the other of the two disgraceful colors, tenné (tawney) and sanguine. Such are the delf tenné, assigned to him who revokes his challenge; the escutcheon reversed sanguine, proper to him who offends the chastity of virgin, wife, or widow, or flies from his sovereign's banner; the point-dexter tenné, due to him who overmuch boasts himself of his martial acts; and the like. Marks of abatement are generally repudiated by the best heraldic authorities. Menestrier calls

them *sottises Anglaises*, and Montagu is of opinion that we shall seek in vain for a more appropriate designation. Abatements are carefully to be distinguished from such subtractive alterations in coats-of-arms as signify juniority of birth, or removal from the principal house or senior branch of the family. These are commonly called marks of cadency, distinctions, differences, or brisures. The latter term is generally applied to marks of bastardy, which might with less impropriety be classed with abatements.

ABATEMENT, in Law: **A.**, in contracts, is a reduction made by the creditor, in return for the prompt payment of a debt. In mercantile law, the term is understood to mean the deduction sometimes made at the custom-house from the duties chargeable upon goods when they are damaged. **A.**, in pleading, means the overthrow of an action in consequence of some error committed in bringing or conducting it, when the plaintiff is not forever barred from bringing another action. Pleas relating to the jurisdiction of the court can only be inquired into under the general issue, and that is where no court of the country has jurisdiction of the cause, for in that case no action can be maintained. In regard to the person—the defendant may plead to the person of the plaintiff that there never was any such person in *rerum natura*. A nominal plaintiff in ejectment, however, may sustain an action. Death of plaintiff before the serving of the original writ may be pleaded in **A.** A suit brought by a lunatic under guardianship shall abate. **A.** of legacies is the reduction of legacies for the purpose of paying the testator's debts. **A.** of nuisances is the prostration or removal of them, and any person may do it, either by destruction or removal. See **ACTION: CUSTOMS DUTIES: FREEHOLD: LEGACY: MERCANTILE LAW: NUISANCE.**

ABATIS, n. *ab'â-tis* or *ab'â-tē*, also spelt **AB'ATTIS**, **AB'ATISES**, Eng. plu. *-is-es* [*F. abatis*, a felling, as trees; *abaitre*,

ABATTOIR—ABAUZIT.

to beat down: mid. L. *abbāticūs*—from *abbātērē*: see **ABATE**]: a species of intrenchment, and one of the oldest. It consists of trees felled (*abattu*), and laid side by side, with the branches directed towards the enemy, the softer twigs being cut off. It thus forms a breastwork to fire over, and is very useful in field-works and in the out-works of regular fortifications, for retarding the enemy's advance.

ABATTOIR, n. *āb'āt-wār'*, **AB'ATTOIRS**, Eng. plu. *-wārs* [F.]: a public slaughter-house. The use of this term passed into England from France, where were the first public establishments for the slaughter of animals used as food, on such a scale and with such sanitary arrangements as to obviate the injurious effects of private slaughter-houses in the midst of a crowded population. This great public improvement originated with Napoleon, who passed a decree in 1807 for the erection of public *abattoirs*. The extensive works connected with this design were nearly completed before the fall of the Empire; but it was not till the close of 1818 that the Parisian butchers ceased to slaughter in their private establishments. There are now a number of these *abattoirs* in Paris, which, both in architectural propriety and completeness of internal arrangement, are models of their kind. The charge per head is, for an ox 6 francs, a cow 4 fr., a calf 2 fr., and a sheep 50 centimes. Other towns in France have similar *abattoirs*; and so have Mantua and Brussels. Owing to the large export trade in live, dead, and preserved meat from the United States, the slaughter-houses of Chicago, St. Louis, and New York are large and perfectly equipped, and are usually provided with cold storage-chambers for meat.

The erection of similar establishments in Britain is of comparatively recent date. The increased use of country-killed meat obviates in part the necessity for further *abattoirs*. In Edinburgh, an excellent A. was erected by the town-council in 1851.

A BATTUTA, *a bat tō tū* (Ital.), in Music: in strict or measured time.

ABAUZIT, *a-bū zē'*, **FIRMIN**: 1679-1767; French savant; b. at Uzès, Languedoc; d. Geneva. His parents were Protestant, and at the revocation of the Edict of Nantes, being only six years of age, he escaped with difficulty, by his mother's contrivance, from the hands of the authorities who wished to educate him into Roman Catholicism, and was sent to Geneva. Here he prosecuted his studies with such intense ardor and diligence, that he became versed in almost all the sciences. He travelled in England and Holland in 1698, where he made the acquaintance of Newton, Bayle, and other eminent writers. Newton, in sending him one of his controversial works, paid him the distinguished compliment of saying: 'You are worthy to decide between Leibnitz and me.' King William, wishing to retain him permanently in England, made him several advantageous offers; but his affection for his mother induced him to return to Geneva. He translated the New Testament into French in 1726; and for his lucid investigations into the ancient history of

ABB—ABBASSIDES.

Geneva he received from its authorities the rights of citizenship. He wrote numerous theological and archaeological treatises, besides leaving one or two scientific and artistic dissertations in manuscript, but the greater portion of these were burned by his heirs, who were Roman Catholics. His orthodoxy has been disputed. Some of his works might give the impression that he was a Unitarian. His personal qualities secured him universal esteem. Rousseau, who could not bear to praise a contemporary, penned his solitary panegyric on A.

ABB, n. *āb* [AS.]: the yarn of a weaver's warp.

ABBA, n. *āb'bā* [Chald. or Syr., a father]: a name given in the East to church dignitaries—the names baba, papa, pope, are also used in same sense. ABBACY, n. *āb'bā-sī*, AB'BACIES, n. plu. *-bā-siz* [F. *abbaye*; OF. *abaie*; mid. L. *abbatiā*; It. *abbadia*; Sp. *abadia*, an abbey: Chald. *abba*, a father]: the dignity or rights and privileges of an abbot. ABBATIAL, a. *ā-bā'shī-āl*, or ABBATICAL, a. *ā-bāt'ī-kāl*, of or pertaining to an abbey. ABBÉ, n. *āb'bē* [F.], a father; a title of courtesy or honor given to persons in many Catholic countries who have given themselves to the study of divinity and literature. ABBESS, n. *āb'bēs* [It. *abbadessa*; mid. L. *abbātissā*]: a lady placed over a nunnery (see MONK). ABBEY, n. *āb'bī*, ABBEYS, n. plu. *āb'bīz*: the place of residence of religious persons secluded from the world, either male or female. ABBOT, n. *āb'būt*, the superior or chief person over an abbey or monastery. AB'BOTSHIP, n. the office of an abbot.—SYN. of 'abbey': convent; cloister; nunnery; monastery; priory.

ABBADIE, *ā-bā-de'*, ANTOINE and ARNOULD-MICHEL D': two brothers, French travellers, known for their researches in Abyssinia, from 1837 to 1845. According to their own account, their objects were purely ethnological and geographical; but they were regarded by certain English travellers and missionaries as agents employed by the French government for religious and political purposes; among the results of their travels are a catalogue of Ethiopian MSS., an Ethiopic version of the *Pastor of Herma*s, and the *Géodesie de l'Ethiopie*. Antoine issued, 1881, a Dictionary of the Amarinna (Amharic) language. Arnould published, 1868, his *Douze Ans dans la Haute-Ethiopie*; he has also distinguished himself by his study of the Basque language.

ABBANDONAMENTÉ, *āb-bān'dōn-ā mēnt'ā* (Ital.), in Music: with self-abandonment; despondingly.

ABBAS, *āb-bās'*: d. 652; the uncle of Mohammed, the Arabian prophet, and the chief promoter of his religion: founder of the family of the ABBASSIDES.

ABBASSIDES, THE: n. *āb-ās'īd-ēz* or *āb-ās-sēdz* [after *Abbas*, the paternal uncle of Mohammed; -*ides*, descendants of—from Gr. *ides*, patronymic postfix]: a line or dynasty of Arab caliphs, reigning from A.D. 749-1257, the most celebrated of whom was Haroun-al-Raschid, died 802. They ruled as caliphs of Bagdad, 749-1257, and afterwards

ABBASSIDES—ABBATE.

exercised the spiritual functions of the caliphate in Egypt, under the protection of the Mamelukes, till 1517, when that dignity passed to the Turkish sultan. Descendants of this family still live in Turkey and India.

ABBASSIDES, THE : a reigning family in Persia; were descended from the race of the Sofi, who ascribed their origin to the caliph Ali. This race acquired dominion in 1500, and became extinct in 1736. Among them, Abbas I., surnamed the Great, was the most eminent. He came to the throne 1586; d. 1628. His reign was marked by a series of victories over the Turks. In alliance with England, he destroyed, in 1621, the Portuguese colony at Ormuz.

ABBAS-MIRZA, *âb'bâs mîr'zâ* : 1783-1833 : a Persian prince, well known by his wars against Russia, the son of the Shah Feth-Ali. A. had great talents and acquirements, and a love for the manners and culture of the West. When he was yet young, his father made him governor of the province Azerbijan, where, by the help of English officers, he applied himself to the reform of the army. When Persia, in 1811, influenced by France, declared war against Russia, A. was commander-in-chief of the main body of the Persian army, but was unsuccessful. Persia lost, at the peace of Gulistan, in 1813, its remaining possessions in the Caucasus, and was forced to acknowledge the flag of Russia on the Caspian Sea. At the instigation of A., a new war broke out in 1826, between Feth-Ali and Russia. The prince fought a second time with extraordinary bravery at the head of the army, but was again forced to yield to the Russian arms, and to conclude a peace, 1828, at Turkmanstchai, by which Persia lost all share in Armenia. In this treaty, Russia had guaranteed to A. the succession to the Persian throne, the consequence of which was that he became dependent on Russia, and was obliged to give up his connection with England. When, in 1829, the Russian ambassador at Teheran was murdered in a popular tumult, which he had provoked by imprudence, A. went in person to St. Petersburg, to prevent any ill consequences, and to maintain the peace. He was received by the emperor with kindness, and went back to Persia loaded with presents. His death was a great loss to his country, although he could not have prevented the encroachments of Russia. His eldest son, Mohammed Mirza, mounted the throne in 1834, on the death of Feth-Ali, under the united protection of England and Russia.

ABBATE, *âb-bâ'tû*, NICCOLO DELL, or NICCOLO ABATI : 1509 or 12-71; b. Modena, d. Paris: artist in fresco-painting; a follower both of Raphael and Correggio; yet he rather blended the two styles in one than imitated either separately. His influence is traceable in art during the second half of the 16th c. His earlier works are to be seen at Modena; his later ones at Bologna, among which is his 'Adoration of the Shepherds,' considered his finest; but he is best known by the frescoes which he executed for the Castle of Fontainebleau, from the designs of Primaticcio. These, however, with the exception of the tableaux representing the history.

ABBÉ—ABBIATÉ GRASSO.

of Alexander the Great, were unfortunately destroyed in 1738, at the barbarous suggestion of an architect who wished to enlarge the building.

ABBÉ (see **ABBA**): the French name for an Abbot (q. v.), but often used in the general sense of a priest or clergyman. By a concordat between Pope Leo X. and Francis I. (1516), the French king had the right to nominate upward of 200 *Abbés Commendataires*, who, without having any duty to perform, drew a considerable proportion of the revenues of the convents. The hope of obtaining one of those sinecures led multitudes of young men, many of them of noble birth, to enter the clerical career, who, however, seldom went further than taking the inferior orders (see **ORDERS, HOLY**); and it became customary to call all such aspirants abbés—jocularly, Abbés of St. Hope. They formed a considerable and powerful class in society; and an abbé, distinguished by a short black or violet-colored frock, and a peculiar style of wearing the hair, was found as friend or ghostly adviser in almost every family of consequence. When a candidate obtained an abbey, he was enjoined to take holy orders; but many procured dispensation, and continued to draw the revenues as secular or lay abbots.

ABBESS (see **ABBA**): the superior of a religious community of women, corresponding in rank and authority to an abbot (q. v.), except in not being allowed to exercise the spiritual functions of the priesthood—such as preaching, confession, etc.

ABBEVILLE, *âb-vêl'*: fortified town of France, dept. of Somme, on river Somme, 12 m. from its mouth, and 90 m. n.-by-w. of Paris. It is built partly on an island and partly on the banks of the river; the streets are narrow and ill paved, and the houses built mostly of brick and wood. The building most worthy of notice is the Church of St. Wolfran, commenced in the reign of Louis XII., whose façade is a splendid example of the flamboyant style, pierced by three deep portals, and surmounted by three high Gothic towers. The chief manufactures of A. are velvets, serges, cottons, linens, sacking, hosiery, jewelry, soap, glass-wares, glue, paper, etc. It is a station on the Railway du Nord, and connected by canals with Amiens, Paris, Lille, and Belgium. Vessels of between 150 and 200 tons can sail up the Somme as far as A. Pop. (1881) 19,283.

ABBEY: see **ABBA**: **MONASTERY**.

ABBEY: used in a legal sense in Scotland, signifies the sanctuary or protection against legal process afforded to a debtor by the A. of Holyrood. This privilege had its origin in the ancient regard for churches as a sanctuary and shelter for all who took refuge within their walls. The first instance known of a debtor seeking refuge in Holyrood Abbey—that of John Scott, 1581—is recorded by George Buchanan. See **SANCTUARY**.

ABBIATÉ-GRASSO, *âb-bê á' tã-grás'sô*: town of Italy, province of Milan, 14 m. w.-s.-w. from Milan city, on the Canal di Bereguardo. It has silk manufactures. Pop. 7,200.

ABBOT.

ABBOT ('father'—see ABBA): name originally given to any aged monk, afterward more strictly applied to the superior of a monastery or abbey. Since the 6th c., abbots have belonged to the clerical orders, but at first they were not necessarily priests. After the second Nicene Council, 787, abbots were empowered to consecrate monks for the lower sacred orders; but they remained in subordination under their diocesan bishops until the 11th c. As abbeys became wealthy, abbots increased in power and influence; many received episcopal titles; and all were ranked as prelates of the church next to the bishops, and had the right of voting in church-councils. Even abbesses contended for the same honors and privileges, but without success. In the 8th and 9th c., abbeys began to come into the hands of laymen, as rewards for military service. In the 10th c., many of the chief abbeys in Christendom were under lay-abbots (*Abbatēs Milites*, or *Abba-comites*), while subordinate deans or priors had the spiritual oversight. The members of the royal household received grants of abbeys as their maintenance, and the king kept the richest for himself. Thus, Hugo Capet of France was lay-abbot of St. Denis, near Paris. Sometimes convents of nuns were granted to men, and monasteries to women of rank. These abuses were, in a great measure, reformed during the 10th c. After the reformation of the order of Benedictines, monasteries arose that were dependent upon the mother-monastery of Clugny and without abbots, being presided over by priors or *pro-abbates*. Of the orders founded after the 11th c., only some named the superiors of their convents abbots; most, from humility or other cause, used the titles of prior, major, guardian, rector. Abbesses have almost always remained under the jurisdiction of their diocesan bishop; but the abbots of independent or liberated abbeys acknowledged no lord but the pope. In the middle ages, the so-called *Abbatēs Mitrati* frequently enjoyed episcopal titles, but only a few had dioceses. Before the period of secularization in Germany, several of the abbots in that country had princely titles and powers. In England there were a considerable number of *Mitred Abbots* who sat and voted in the House of Lords. The election of an abbot belongs, as a rule, to the chapter or assembly of the monks, and is afterward confirmed by the pope or by the bishop, according as the monastery is independent or under episcopal jurisdiction. But from early times, the pope in Italy has claimed the right of conferring abbacies, and the concordat of 1516 gave that right to the king of France. Non-monastic clergy who possessed monasteries were styled *Secular Abbots*; while their vicars, who discharged the duties, as well as all abbots who belonged to the monastic order, were styled *Regular Abbots*. In France, the abuse of appointing secular abbots was carried to a great extent previous to the Revolution. (See ABBÉ.) Often monasteries themselves chose some powerful person as their secular abbot, with a view of 'commending' or committing their abbey to his protection (*Abbés Commendataires*). In countries which joined in the Reformation, the possessions of abbeys

ABBOT—ABBOTT.

were mostly confiscated by the crown; but in Hanover, Brunswick, and Würtemberg several monasteries and convents were retained as educational establishments. In the Greek Church, the superiors of convents are called *Hegumeni* or *Mandrites*, and general abbots, *Archimandrites*.

ABBOT, CHARLES : see COLCHESTER, LORD.

ABBOT, *äb'öt*, GEORGE: 1562–1633: English prelate under the Stuarts—remarkable chiefly for his position as an active opponent of the policy of Laud and a despotic court: the son of a cloth-manufacturer in Guildford. After studying at Oxford, he was appointed chaplain to the Earl of Dunbar, 1608, with whom he went to Scotland. This appointment was the basis of A.'s subsequent promotion. For a short time he held the see of Lichfield and Coventry, and in 1610 was made archbishop of Canterbury. As a learned and able man, but more especially as a friend of toleration, he gained the esteem of all parties in an age of religious animosities. James I. employed the advice of A. in the most important affairs of state, and the prelate often opposed the arbitrary principles of the king. A.'s intolerance of Arminian doctrines was an exception to his general rule of conduct. His independent and liberal spirit incurred the displeasure of Charles I. A. was employed on the authorized translation of the Bible under James I. His other literary productions are not important. He died at Croydon, and a monument was erected to his memory in his native town, Guildford.—His brother, ROBERT A., bishop of Salisbury (1560–1617), was a learned theologian, and the author of a treatise *De Suprema Potestate Regia* (1616), written to controvert the doctrines of Bellarmine and Suarez.

ABBOTSFORD: the seat of Sir Walter Scott; on the s. bank of the Tweed, a little above its confluence with the Gala, and about three miles from the town of Melrose. Before it became, in 1811, the property of Sir Walter, the site of the house and grounds of A. formed a small farm known by the name of *Clarty Hole*. The new name was the invention of the poet, whom it pleased thus to connect himself with the days when Melrose abbots passed over the fords of the Tweed. On this spot, a sloping bank overhanging the river, with the Selkirk Hills behind, he built at first a small villa, now the western wing of the castle. Afterwards, as his fortune increased, he added the remaining portions of the building, on no uniform plan, but with the desire of combining in it some of the features (and even actual remains) of those ancient works of Scottish architecture which he most venerated. The result was that singularly picturesque and irregular pile, which has been aptly characterized as 'a romance in stone and lime.' The present proprietor of A. is the Hon. Joseph Constable Maxwell, son of Lord Herries, who, in 1873, married a great-granddaughter of the novelist, and assumed the name of Scott. A. is visited annually by thousands of people of every nationality.

ABBOTT, CHARLES : see TENTERDEN, LORD.

ABBOTT, JACOB : 1803–79; b. Maine: 1825 to 1829, a professor in Amherst College. In 1838 he began writing

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those simple and popular works, mainly for the young, by which his name was so widely known. His works numbered 300 vols.; but it is perhaps not too much to say, that of all works intended for the juvenile mind, his are the best in the English language. So thoughtful an instructor of youth even as Dr. Arnold speaks in high terms of *The Way to do Good*. Nearly all his books have been repeatedly republished in England, and some have been translated into various European and Asiatic languages. His most popular work is *The Young Christian*. Besides this, he has written *The Franconia Stories*; *Histories of Celebrated Persons*, 30 vols.; *Harper's Story books*, 36 vols.; etc.

ABBOT, EZRA, D.D., LL.D.: 1819-84; b. Jackson, Me.: eminent Biblical scholar. The accounts of his childhood and early boyhood show remarkable precocity and promise of the ability and learning for which he became distinguished. He prepared for college at Phillips Academy, Exeter, N. H., and graduated at Bowdoin College, 1840. In 1856 Dr. Abbot was appointed to a position in the library of Harvard Univ., and soon became an authority on bibliography. In 1872 he became professor of New Testament criticism in the Harvard Divinity School, and on the formation of the American Committee of New Testament Revisers he was selected as one of its members. He was a frequent contributor to the leading religious magazines, including the *Bibliotheca Sacra* (Andover) and the *Unitarian Review*, and was the author of a valuable examination into the "Authorship of the Fourth Gospel," which has taken rank among the highest authorities on that disputed theme. He also compiled the extraordinary bibliographical work attached as an appendix to Alger's *History of the Doctrine of the Future Life*, containing more than five thousand three hundred titles of works relating to the Nature, Origin, and Destiny of the Soul. This invaluable catalogue is provided with notes and alphabetical indexes, and has two appendices containing titles of the more remarkable works on Modern Spiritualism, and relating to the Souls of Brutes. Dr. A. was an enthusiastic lover of nature, particularly of flowers and of the starry heavens. He was modest and retiring in disposition, a gentle, kindly Christian in character. a student all his life—industrious and painstaking, and a critic of rare judgment, of perfect candor, and of curious accuracy.

ABBOTT, JOHN STEPHENS CABOT: 1805-77; b. Maine: clergyman and author, brother of Jacob. He was a graduate of Bowdoin College and Andover Theol. Sem. After studying systems of education in the United States and Europe, he was ordained in 1830, and was pastor of Congregational churches successively in Worcester, Roxbury, and Nantucket, Mass. The success of *The Mother at Home*, published by him, 1833, and of a succeeding work, *The Child at Home*, induced him to devote himself to literary work, mainly of a historical and religious character. Among his larger works are: *Kings and Queens; or, Life in the Palace*; *The French Revolution of 1789*; *The History of*

ABBOTT—ABBREVIATE.

Napoleon Bonaparte; Napoleon at St. Helena; The History of Napoleon III.; History of the Civil War in America; Romance of Spanish History; The History of Frederick the Second of Prussia; and The History of Christianity. He also wrote many smaller biographies. His most popular work is *The History of Napoleon Bonaparte*. His style was graphic and vivid, his historical grouping effective, his narrative and description lively, and his works had an enormous sale in this country and abroad. He d. in Fairhaven, Conn.

ABBOTT, LYMAN, D.D.: b. Roxbury, Mass., 1835; son of Jacob: clergyman, and editor of the *Christian Union*. He graduated at the Univ. of New York, 1858, and studied law with his brothers, Benjamin and Austin, the joint authors of *Conecticut Corners* and *Matthew Curnaby*. He afterwards studied theology with his uncle, John S. C. Abbott, was ordained in 1860, and was pastor of Congregational churches in Terre Haute, Ind., and in New York. From 1860 till 1868, he was sec. of the Am. Union Freedmen's Commission. About 1869 he began to give his whole attention to literature, chiefly editorial. He was connected with *Harper's Monthly Magazine*, *The Illustrated Christian Weekly*, and later was associated with Henry Ward Beecher in the editorship of *The Christian Union*, New York, of which he has for some years been editor-in-chief. He has edited *Sermons and Morning and Evening Exercises* of Henry Ward Beecher, and has written numerous works. Among them are: *The Results of Emancipation in the United States; Old Testament Shadows of New Testament Truths; Jesus of Nazareth: His Life and Teachings; Illustrated Commentary on the New Testament; A Layman's Story; and a Dictionary of Religious Knowledge.* He has fine spiritual insight and rare felicity in expression.

ABBREVIATE, v. *āb-brē'vī-āt* [mid. L. *abbrēviātūs*, shortened—from L. *ab, brēvis*, short]: to shorten; to reduce to a smaller size; to abridge. ABBRE'VIA'TING, imp. ABBRE'VIA'TED, pp. ABBREVIATION, n. *āb-brē'vī-ā'shūn*, the act of shortening; a part of a word used for the whole. ABBRE'VIA'TOR, n. one who: ABBREVIATORY, a. *āb-brē'vī-ā-tōr-ī*, shortening: ABBRE'VIATURE, n. *-vī-ā-tūr*, an abbreviation.—SYN. of 'abbreviate': to abridge; curtail; contract.

ABBREVIATIONS.

ABBREVIATIONS: contrivances in writing for saving time and space. They are of two kinds, consisting either in the omission of some letters or words, or in the substitution of some arbitrary sign. In the earliest times, when uncial or lapidary characters were used, A. by omission prevailed, such as we find on the inscriptions on monuments, coins, etc. In these, the initial letter is often put instead of the whole word, as M. for Marcus, F. for Filius. It was after the small Greek and Roman letters had been invented by transcribers for facilitating their work, that signs of abbreviation, or characters representing double consonants, syllables, and whole words, came into use. Greek manuscripts abound with such signs, and often only one that has expressly studied Greek palæography can interpret them. From the manuscripts, they passed into the early printed editions of Greek books, and it is only recently that they have quite disappeared. Among the Romans, signs of abbreviation were called *notæ*, and professed scribes who employed them were *notarii*. To such an extent was the system carried, that L. Annæus Seneca collected and classified 5,000 A. The same practice has prevailed in all languages, but nowhere more than in the Rabbinical writings. —The A. used by the ancient Romans were continued and increased in the middle ages. They occur in inscriptions, manuscripts, and legal documents; and the practice continued in these long after the invention of printing had made it unnecessary in books. An act of parliament was passed in the reign of George II. forbidding the use of A. in legal documents. Owing to these A., the deciphering of old writings requires special study and training, and forms a separate science called Diplomatics (q.v.), on which numerous treatises have been written. Tassin's *Nouveau Traité de Diplomatique* (6 vols., Par. 1750–65) contains, in the third volume, an exposition of Roman A. Other works on the subject are—Gatterer's *Abriss der Diplomatik* (2 vols., Gott. 1798); Pertz's *Schrifttafeln* (4 Nos., Hannov. 1846); and Kopp's *Palæographica Critica* (4 vols., Manh. 1817–29).—In ordinary writing and printing, few A. are now employed. The sign &, originally an abbreviation for the Lat. *et*, 'and,' is perhaps the only one of the arbitrary kind still used. It does not stand properly for a word, for it is used in different languages, but for an idea, and is as much a symbol as +. The A. by using the initials of Latin words are now confined chiefly to titles, dates, and a few phrases; as, M.A. (*magister artium*), Master of Arts; A.D. (*anno domini*), in the year of our Lord; e.g. (*exempli gratiâ*), for example. Many are now formed from English words in the same way; as, F.G.S., Fellow of the Geological Society; B.C., before Christ.—Most of the sciences and arts have sets of signs of abbreviation, or symbols, peculiar to themselves. These are of great use both for brevity and clearness. See **CHEMICAL SYMBOLS**, etc.

The following are the more important A. in general use :

A, or α (<i>Alpha</i>). Greek A, a.	A. Acre, Acting, Adjective,
A., or Ans. Answer.	Afternoon, Alto.
a., arc (of the French metric system).	A. (<i>Commerce</i> .) Accepted.
	A1. First class or rate.

ABBREVIATIONS.

- a., or @. At, or to.
 aa., or aa. (*Ana*, *Gr. ἀνά*.) In *med.*, of each the same quantity.
 A.A. Associate of Arts.
 Aa. Aaron.
 AAA. (*Amalgama*.) Amalgamation. [See *AMM.*]
 A. A. A. G. Acting Assistant Adjutant General.
 A. A. A. S. American Association for the Advancement of Science, American Academy of Arts and Sciences.
 AA. C. Antarctic Circle.
 A. A. G. Assistant Adjutant General.
 A. A. Q. M. Acting Assistant Quarter Master.
 A. A. Q. M. G. Acting Assistant Quarter Master General.
 A. A. S. American Academy of Sciences.
 A. A. S. (*Academice Americanæ Socius*.) Fellow of the American Academy.
 A. A. S. S. (*Americanæ Antiquariæ Societatis Socius*.) Member of American Antiquarian Society.
 A. B. Able-bodied seamen.
 A. B. (*Artium Baccalaureus*.) Bachelor of Arts. [See *B. A.*]
 Abb. Abbot, or Abbess.
 Abbr., or Abbrev. Abbreviated, or Abbreviation.
 A. B. C. F. M. American Board of Commissioners for Foreign Missions.
 Ab ex. (*Ab extra*.) From without.
 A. B. I. S. W. Associated Brotherhood of Iron and Steel Workers.
 A. B. K. (*Αλφα Βετα Καννα*.) Alpha Beta Kappa (College Society).
 Abl. Ablative.
 Abp. Archbishop.
 Abr. Abridge, or Abridged.
 A. B. S. American Bible Society.
 Abs. (*med.*) Absinthe.
 Abs. re. (*Absente reo*.) *Law*. While the defendant was absent.
 A. C. (*Ante Christum*.) Before Christ.
 A. C. Army Corps.
 Ac. Acre.
 Acad. Mus. Academy of Music.
 Acc. Accusative.
 Acc., or acct. Account.
 Acct. Cur. Account Current.
 Acct. Sales. Account of sales.
 A. C. G. S. Acting Commissary General of Subsistence.
 A. C. S. American Colonization Society.
 A. C. S. Acting Commissary of Subsistence.
 Act. Active.
 A. C. U. L. Alden's Cyclopedia of Universal Literature.
 A. D. (*Anno Domini*.) In the Year of our Lord.
 a. d. After date.
 Ad. or Adv. Adverb, Adversitisement.
 Adag. (*Adagio*.) In *mus.*, a slow movement.
 A. D. C. Aide-de-Camp.
 Ad. Ex. Adams Express.
 Ad. Inf. (*Ad Infinitum*.) Without limit.
 Ad. Int. (*Ad Interim*.) In the meanwhile.
 Adj. Adjective.
 Adj. Adjutant.
 Adj. Gen., or A. G. Adjutant General.
 Ad. lib., or Ad. libit. (*Ad libitum*.) At pleasure.
 Adm. Admiral, Admiralty.
 Adm. Co. Admiralty Court.
 Admr. Administrator, Administration.
 Admx. Administratrix.
 Α·Δ·Φ· (*Αλφα Δελτα Φι.*) Alpha Delta Phi (College Society).
 Ad v. (*Ad valorem*.) At the value.
 Adv. Advocate, Advent.
 Æ., or Æt. (*Ætatis*.) Of age, Aged.
 Af, or Afr. Africa, African.
 A. F. A. M. Ancient Free and Accepted Masons.
 A. E. I. O. U. (*Austriæ est Imperare Orbi Universo*, or *Alles Erdreich Ist Oesterreich Unterthan*.) It is given to Austria to Rule the whole Earth. (The device of Austria first adopted by Frederick III.)
 A. G. Adjutant General, Accountant General.
 Ag. (*Argentum*.) Silver.
 Agr., Agri., or Agric. Agriculture.
 A. G. S. S. American Geographical and Statistical Society.
 Agt. Agent.
 A. H. (*Anno Hegiræ*.) In the year of the Hegira, or flight of Mohammed.
 A. H. M. S. American Home Missionary Society.
 A. I. American Institute.
 A. I. A. American Institute of Architecture.
 A. I. G. Assistant Inspector General.
 Al. Aluminum.
 Ala. Alabama.
 Alas. Alaska Territory.
 Ald. Alderman.
 Alex. Alexander.
 Alf. Alfred.
 Ali. (*Alibi*.) Elsewhere.
 Alt. Altitude.
 Alum. Yalen. (*Alumnus Yalensis*.) Alumnus of Yale College.
 A. M. (*Artium Magister*.) Master of Arts. [See *M. A.*] (*Ante Meridiem*.) Before noon. (*Anno Mundi*.) In the Year of the World. (*Ante Mortem*.) Before death.
 Am. Amos.

ABBREVIATIONS.

Am., or Amer. America, American.

A. M. A. American Medical Association.

A. M. C. Alden's Manifold Cyclopaedia.

Am. Ant. Soc. American Antiquarian Society.

Am. Asn. Soc. Sci. American Association for Advancement of Social Science.

Am. Col. Soc. American Colonization Society.

Am. Cyc. American Cyclopædia.

Am. Ex. American Express.

Amer. Phar. Soc. American Pharmaceutical Society.

A. M. G. Acting Major General.

Amh. Coll. Amherst College.

Am. L. of H. American Legion of Honor.

AMM. (*Amalgama.*) Amalgamation. [See AAA.]

Am. Mus. Nat. Hist. American Museum of Natural History.

Am. Num. Arch. Soc. American Numismatic and Archæological Society.

Am. Philog. Soc. American Philological Society.

Am. Phil. Soc. American Philosophical Society.

Amt. Amount.

Am. Vet. Coll. American Veterinary College (New York).

An. (*Anno.*) In the year.

An., or Ans. Answer.

Ana. (med.) In equal quantity.

An. A. C. (*Anno Ante Christum.*) In the Year before Christ.

Anal. Analysis.

Anat. Anatomy.

Anat. Mus. Anatomical Museum.

Anc. Ancient, Anciently.

Anc. Hist. Ancient History.

And. Andrew, André, Andrea.

And. Theol. Sem. Andover Theological Seminary.

Ang. (*Anglice.*) In English.

Ang.-Sax. Anglo-Saxon.

Anno. Annotate, Annotation.

Anon. Anonymous.

Ans. Answer.

Ant., or Antiq. Antiquity, or Antiquities.

Anth. Anthony.

Anthr. Soc. Anthropological Society.

A. O. F. Ancient Order of Foresters.

A. O. H. Ancient Order of Hibernians.

Aor. Aorist, Aoristic.

A. O. S. S. (*Americanæ Orientalis Societatis Socius.*) Member of the American Oriental Society.

A. O. U. W. Ancient Order of United Workmen.

Ap. Apostle, April, Applus.

Ap. (Apud.) In the writings of, As quoted by.

A. P. H. A. American Public Health Association.

A. P. M. Assistant Pay Master.

Apo. Apogee.

Apoc. Apocrypha, Apocalypse.

Apen. Apennine.

Apr. April.

A pri. (A priori.) From something prior.

Aq. (Aqua.) Water.

A. Q. M. Assistant Quarter Master.

A. Q. M. G. Assistant Quarter Master General.

A. R. (Anno Regni.) In the Year of the Reign.

A. R. A. Associate of the Royal Academy.

Arab. Arabic, Arabian.

Arc. Circ. Arctic Circle.

Arch. Architect, Architecture, Archibald.

Archd. Archdeacon.

Arg. Rep. Argentine Republic.

A. R. H. A. Associate of the Royal Hibernian Academy.

Arith. Arithmetic.

Ariz. Ter. Arizona Territory.

Ark. Arkansas.

Arn. Arnold.

Arr. Arrived.

A. R. R. (Anno Regni Regis, or Reginæ.) In the year of the King's or Queen's Reign.

A. R. S. A. Associate of the Royal Scottish Academy.

A. R. S. S. (Antiquariorum Regiæ Societatis Socius.) Fellow of the Royal Society of Antiquaries.

Art. Article, Artemus.

Arth. Arthur, Arthurean.

A. S. Academy of Science.

A. S., or Assist. Sec. Assistant Secretary.

A. S. Assistant Surgeon.

As. Arsenic, Arkansas, Astronomy, Asia, Asiatic.

A. S. A. American Statistical Association.

A. S., A-S., A S., A Sax., or Ang.-Sax. Anglo-Saxon.

A. S. A. S. Member of the American Statistical Association.

A. S. C. E. A. American Society of Civil Engineers and Architects.

A. S. P. C. A. American Society for Prevention of Cruelty to Animals.

Ass't'd. Assorted.

Asst. Surg. Assistant Surgeon.

A. S. S. U. American Sunday School Union.

Astrol. Astrology.

Astron. Astronomy.

A. T. S. American Tract Society, American Temperance Society.

Ats. At suit of.

Atty. Attorney.

Att.-Gen. Attorney-General.

At. Wt. Atomic Weight.

ABBREVIATIONS.

- Am.** (*Aurum*.) Gold.
A. U. A. American Unitarian Association.
Aub. Theol. Sem. Auburn Theological Seminary.
A. U. C. (*Anno Urbis Condite*, or *Ab Urbe Condita*.) In the Year from the Building of the City—(Rome).
Aud. Treas. Dept. Auditor Treasury Department.
Aug. August.
Aur. (*Aurum*.) Gold.
Auth. Ver., or **A. V.** Authorized Version (of the Bible).
Av. Average, Avenue.
Ave. Avenue.
Avoir. Avoirdupois.
A. Y. M. Ancient York Masons.
B. or **β.** (*Beta*.) Greek B, b.
B. Base or Bass (in music),
Baron, Book, Bay.
b. Born, Book.
B. A. Bachelor of Arts. [See **A. B.**]
British America.
Ba. Barium.
Baa. Baal, Baalam.
Bach. Bachelor.
B. Agr. Bachelor of Agriculture.
Bald. Baldwin.
Balt. Baltimore.
Bank. Banker, Banking.
Bar. Barrel, Baruch, Barometer, Barrister.
B. Arch. Bachelor of Architecture.
Bart., or **Bt.** Baronet.
Bat. Battery, Battalion.
B. B. Bill Book.
B. B. C. Base Ball Club.
Bbl. Barrel, Barrels.
B. C. Before Christ, Board of Control.
B. C. L. Bachelor of Civil Law.
B. D. Bachelor of Divinity.
Bd. Bound, Bond, Bound in.
Bds. Boards.
Be. (*Beryllium*.) Glucinum.
Beau. Beaufort, Beauregard.
Benj. Benjamin.
Berks. Berkshire.
Bev. Beverley.
B F., or **B. fir.** Firkin of Butter.
B. I. British India.
Bi. Bismuth.
Bib. Bible, Biblical.
Biog. Biography.
Bis. Bismarck, Bismuth, Bisextile.
Bisc. Biscayan.
Bk. Book, Bank.
Bk. Comr. Bank Commissioner.
Bk. Ex. Book Exchange.
Bk.-Kr. Book-Keeper.
B. L., Bachelor of Laws. [See **LL. B.**]
B/L. (*com.*) Bill of Lading.
Bl., or **Bls.** Barrel, Barrels.
B. Lit. (*Baccalaureus Literarum*.) Bachelor of Letters.
B. LL. (*Baccalaureus Legum*.) Bachelor of Laws.
B. M. (*Baccalaureus Medicinæ*.) Bachelor of Medicine. [See **M. B.**]
B. M. (*Beatæ Memorix*.) Of blessed memory.
B. M. E. Bachelor of Mechanical Engineering, Bachelor of Mining Engineering.
B. Mech. Bachelor of Mechanics.
B. Mus. Bachelor of Music.
Bohem. Bohemian.
Bon. Bonaparte.
Bor. Borough, Boron.
Bot. Bought.
Bot. Botany, Botanical, Botanist.
Boul. Boulevard.
Bowd. Coll. Bowdoin College.
Bp. Bishop.
B/P. Bill of Parcels.
B. Pay. Bills Payable.
B. P. B. Bank Post Bills.
B. P. O. Elks. Benevolent and Protective Order of Elks.
B. R. The King's or Queen's Bench.
Br. Brother, Bromine, Brig.
Braz. Brazil, Brazilian.
B. Rec. Bills Receivable.
Brig. Brigade, Brigadier.
Brig. Gen. Brigadier General.
Brit. British, Britain, Britannia, Britannicus.
Brit. Mus. British Museum.
Bro., Bros. Brother, Brothers.
Brook. N. Y. Brooklyn Navy Yard.
Br. Univ. Brown University.
B. S., or **B. Sc.** Bachelor of Science.
B/S. Bill of Sale.
Bu., or **Bush.** Bushel.
Bucks. Buckinghamshire.
Burg. Burgomaster, Burgess.
B. V. (*Bene Vale*.) Farewell, (*Beata Virgo*.) Blessed Virgin.
B. Vet. Med. Bachelor of Veterinary Medicine.
B. V. M. Blessed Virgin Mary.
B. W. T. A. British Women's Temperance Association.
C. Chairman, Carbon, Church.
Consul, Chapter.
C. (*Centum*.) A hundred, Cent, Centime.
C. (*Congius*.) Gallon.
C/—. Currency, Coupon.
Ca. (*Circa*.) About.
Ca. Centare (metric system).
C. A. Commercial Agent, Comptroller (or Controller) of Accounts, Chief Accountant, Chartered Accountant, Confederate Army.
Ca. Canada, Canadian.
Cadav. (med.) Cadaver.
Cal. Calcium, California.
Cal. (Calendæ.) Calends, Calendar.
Cam. (med.) Camphor.
Cam., or **Camb.** Cambridge.
Camb Obs. Cambridge Observatory.

ABBREVIATIONS.

Jan. Canada, Canon.
 Cant. Canticles.
 Cantab. (*Cantabrigiensis*.) Of
 Cambridge.
 Cantuar. (*Cantuarensis*.) Of
 Canterbury.
 Cap., or c. (*Caput Capitulum*.)
 Chapter.
 Cap. Capitol, Capital, Capital
 Letter.
 Caps. Capitals.
 Capt. Captain.
 Capt. Gen. Captain General.
 Car. Carat.
 Card. Cardinal.
 Ca. Resp. (*Capias ad respond-*
endum.) A legal writ.
 C. A. S. (*Connecticutensis*
Academiæ Socius.) Fellow of
 Connecticut Academy.
 Ca. Sa. (*Capias ad satisfaci-*
endum.) A legal writ.
 Cash. Cashier.
 Cast. Castle.
 Cat., or Catal. Catalogue.
 Cath. Catherine, Catholic,
 Cathedral.
 Cath. Inst. Catholic Institute.
 Caus. Causative.
 Cav. Cavalry.
 C. B. (*Communis Bancus*.)
 Common Bench.
 C. B. Companion of the Bath,
 Cape Breton.
 Cb. Columbum.
 C. C. Cubic Centimetre.
 C. C. Caius College. (*Compte*
Courante.) Account Current,
 Crown Clerk, County Court,
 County Clerk, Consular Clerk,
 County Commissioner.
 C. C. A. Chief Clerk of the
 Admiralty.
 C. C. C. Corpus Christi Col-
 lege, Christ's College, Cambridge.
 C. C. P. Court of Common
 Pleas.
 Cd. Cadmium.
 Ce. Cerium.
 C. E. Civil Engineer, Canada
 East.
 Cel. or Celt. Celtic.
 Cen. Century, Centennial.
 Cent. (*Centum*.) A hundred.
 Cf. (*Confer.*) Compare.
 C. F. I. Cost, Freight, and In-
 surance.
 C. G. Commissary General,
 Captain of the Guard, Coast
 Guard.
 C. G. H. Cape of Good Hope.
 C. G. S. Commissary General
 of Subsistence.
 C. H. Court House, Captain of
 the Host, Custom House.
 Ch. Church, Chapter, Char-
 lotte, Charles.
 Cham. (*med.*) Chamomile.
 Chamb. Chamberlain.
 Chal., or Chald. Chaldron,
 Chaldee, Chaldaic, Chaldean.
 Chamb. Encyc. Chambers's
 Encyclopædia.
 Chanc. Chancellor.

Chap. Chapter, Chaplain.
 Char. Charter.
 Chas. Charles.
 Chat. Chattel.
 Chem. Chemistry, Chemical,
 Chemist.
 Chey. Cheyenne.
 Chf. Chief.
 Chf. Con. Chief of Construction.
 Chf. E., or Chf. Eng. Chief
 Engineer.
 Chf. Med. Pur. Chief Medical
 Purveyor.
 Chf. Ord. Chief of Ordnance.
 Chftn. Chieftain.
 Chi. (χ) Greek Ch.
 Chin. Chinese.
 Chlo. Chloroform, Chloride.
 tn., or Xn. Christian.
 tnty., or Xnty. Christianity.
 Chr. Christopher, Christian.
 tmas., or Xmas. Christmas.
 Chron. Chronicles.
 Cic. Cicero.
 Cin. Cincinnati.
 Cit. Citizen, Cited.
 Civ. Civil, Civilian.
 C. J. Chief Justice.
 Cl. Clergyman, Chlorine, Clerk.
 Cl. Centilitre (metric system).
 C. L. A. Chautauqua Lake As-
 sembly.
 Class. Classical.
 Cleop. Cleopatra.
 Cleve. Cleveland.
 Cld. Cleared.
 Clk. Clerk.
 C. L. S. C. Chautauqua Literary
 and Scientific Circle.
 C. M. (*Congregationis Mis-*
sionum.) Vincentians or Lazar-
 ists.
 C. M. (*Chirurgiæ Magister*.)
 Master in Surgery, Certificated
 Master, Common Metre.
 C. M. G. Companion of the
 Order of St. Michael and St.
 George.
 Co. Company, County, Cobalt.
 C. O. Colonial Office, Crown
 Office, Criminal Office.
 Coad. (*Cum jure suc.*) Coad-
 jutor, with right of succession.
 Coad. Bp. Coadjutor Bishop.
 Coch., or Coch. (*Cochleare*.)
 A teaspoonful, a spoonful.
 C. O. D. Cash (or collect) on
 delivery.
 Cog. Cognate, Cognate with.
 Col. Colonel, Colossians, Colo-
 rado, Column, Colonial, Color.
 Col. Corp. Color Corporal.
 Col. Gd. Color Guard.
 Coll. Collector, Colleague, Col-
 lege, Collection.
 Coll., or Colloq. Colloquial,
 Colloquially.
 Colo. Colorado.
 Col. Sergt. Color Sergeant.
 Com. Commerce, Commit-
 tee, Commentary, Commissioner,
 Commodore, Commune, Com-
 munity, Common, Commoner,
 Commission, Communication.

ABBREVIATIONS.

Com. Agric. Committee on Agriculture, Commissioner of Agriculture.	Con. Sect. Conic Sections.
Com. Arr. Committee of Arrangements.	Cons. et Prud. (<i>Consilio et Prudentia.</i>) By counsel and prudence.
Com. Bk. Committee on Banks.	Cons. Mus. Conservatory of Music.
Com. Cont. Elec. Committee on Contested Elections.	Cont. (<i>Contra.</i>) On the other hand.
Com. Cont. Ex. Committee on Contingent Expenses.	Cont. Bon. Mor. (<i>Contra bonos mores.</i>) Against good manners.
Com. Dept. Commissary Department.	Contr. Contradict, Contraction.
Comdg. Commanding.	Conv. Convent.
Comdt. Commandant.	Cop. Copper, Copernican.
Com. Ed. Committee on Education.	Cop., or Copt. Coptic.
Com. Fin. Committee on Finance.	Cor. Correspondent, Correction, Corinthians, Coroner.
Com. Fin. Adj. Committee on Final Adjournment.	Cor. Mem. Corresponding Member.
Com. For. Rel. Committee on Foreign Relations.	Corn. Univ. Cornell University.
Com. Gov. Mes. Committee on Governor's Message.	Corol. Corollary.
Com. H. Committee of the House.	Corr. Corrupt, Corruption.
Com. Inc. Committee on Incorporations.	Cor. Sec. Corresponding Secretary.
Comm. Commentary.	Cos. Cosine.
Com. M. and R. Committee on Manual and Roll.	Coss. (<i>Consules.</i>) Consuls.
Com. Merch. Commission Merchant.	C. P. Common Pleas, Chief Patriarch, Court of Probate, Clerk of the Peace.
Com. Mil. Aff. Committee on Military Affairs.	C. P. C. Clerk of the Privy Council.
Commo. Commodore.	C. P. S. (<i>Custos Privati Sigilli.</i>) Keeper of the Privy Seal.
Com. Off. Commissioned Officer.	C. R. (<i>Custos Rotulorum.</i>) Keeper of the Rolls. (<i>Civis Romanus.</i>) A Roman Citizen. (<i>Carolus Rex.</i>) King Charles. (<i>Carolina Regina.</i>) Queen Caroline.
Comp. Compare, Compound, Compositor, Composition, Comparative, Compounded.	Cr. Creditor, Credit, Chromium, Crown.
Compar. Comparative.	Cres. (<i>mus.</i>) Crescendo.
Com. Pard. Commissioner of Pardons.	Cri. Crime, Crimean.
Com. Pub. Gds. and Bldgs. Committee on Public Grounds and Buildings.	Crim. Criminal, Criminally.
Com. R. R. Committee on Railroads.	Crim. Con. Criminal Conversation or Adultery.
Com. Sen. Committee of the Senate.	C. R. P. (<i>Calendarium Rotulorum Patentium.</i>) Calendar of the Patent Rolls.
Com. Sergt. Commissary Sergeant.	Crystal., or Crystallog. Crystallography.
Com. S. P. Committee on State Prison.	†, or X. Cross.
Com. Unf. Bus. Committee on Unfinished Business.	†John (or other name.) The signature of a Roman Catholic Bishop.
Com. Ver. Common Version (of the Bible).	Cs. Cæsium.
Con. (<i>Contra.</i>) Against, in opposition.	C. S. Court of Sessions, Commissary of Subsistence.
Con. Constitution, Constantinople, Concordance, Contract.	C. S. (<i>Custos Sigilli.</i>) Keeper of the Seal.
Conch. Conchology.	C. S. A. Confederate States of America, Confederate States Army.
Con. Cr. Contra credit.	C. S. I. Companion of the Star of India.
Cong. Congress, Congregation, Congregationalist.	C. S. N. Confederate States Navy.
Cong. Lib. Congressional Library.	C. S. O. Chief Signal Officer.
Cong. Rec. Congressional Record.	Ct. Cent. (<i>Centum.</i>) A hundred.
Conj. Conjunction.	Ct. Connecticut, Court, Count.
Conn., Conn't., Con., or Ct. Connecticut.	C. T. Certified Teacher.
	C. Theod. (<i>Codex Theodosianus.</i>) The Theodosian Code.
	Cts. Cents.

ABBREVIATIONS.

Cu. (*Cuprum.*) Copper.
 Cum d/— With dividend.
 Cur., or Curt. Current (*i.e.*, this month).
 Cwt. (*Lat. Centum*, a hundred, and *Eng. weight.*) Hundred weight.
 Cyc. Cyclopedias.
 Cym. Cymric.
 Δ, or δ. (*Δελτα.*) Greek D, d.
 D. David, Duke, Duchess, Dowager, Didymium, Dutch, Dose.
 D. Day, Died, Dime, Deputy, Daughter, Degree. (*Denarius*, or *Denarii.*) A penny, or pence.
 D. Five Hundred
 D. A. G. Deputy Adjutant General.
 Dak. Dakota.
 Dan. Daniel, Danish.
 Dart. Coll. Dartmouth College.
 Dat. Dative.
 D. B., or Domesd. B. Domesday Book.
 Dbk. Drawback.
 D. C. Deputy Consul. (*Da Capo.*) Again, or From the beginning.
 D. C. District of Columbia.
 D. C. L. Doctor of Civil (or Canon) Law.
 D. D. Doctor of Divinity.
 d/d— Day's date.
 D. D. S. Doctor of Dental Surgery.
 Del. Delaware.
 Dea. Deacon.
 Dec. December, Declaration, declension.
 Decid. Deciduous.
 Def. Definition.
 Deft. Defendant.
 Deg. Degree, or degrees.
 Del. Delaware, Delegate.
 Del. (*Delineavit.*) He (or she) drew it,—appended to the draughtsman's name.
 Dem. Democrat, Democratic.
 Den. Denmark.
 Dent. Dentist.
 Dep. Deputy, Department.
 Dep. Q. M. G. Deputy Quartermaster General.
 Dept. Department, Deponent.
 Deriv. Derivative, Derivation.
 Deut. Deuteronomy.
 D. F. Dean of the Faculty. (*Fidei Defensor.*) Defender of the Faith.
 Dft. Draft, Defendant.
 'D. G. (*Dei gratia.*) By the Grace of God. (*Deo gratias.*) Thanks to God.
 dg. decigram (metric system).
 Dg. Dekagram (metric system).
 D. H. Dead Head.
 D. H. L. (*Literarum Humaniorum Doctor.*) Doctor of Polite Literature. [See L. H. D.]
 Di. Didymium.
 Diam. Diameter.
 Dict. Dictator, Dictionary.
 Dim. Diminutive, Diminution.
 Dim. (*mus.*) Diminuendo.

Dioc. Diocese, Diocesan.
 Dioc. Sem. Diocesan Seminary.
 Dis. Distance, Distant.
 Dis., Disc., or Disct. Discount.
 Dist. District.
 Dist. Atty. District Attorney.
 Div. Divide, Divided, Division, Dividend, Divisor.
 Dl. Dekalitre (metric system).
 D. Lit. (*Literarum Doctor.*) Doctor of Literature.
 D. L. O. Dead Letter Office.
 Dm. Dekametre (metric system).
 D. M. D. Doctor Dental Medicine.
 Do. (*ditto.*) The same.
 Dol., Dols., \$. Dollars.
 D. O. M. (*Deo Optimo Maximo.*) To God, the best, the greatest.
 Dom. Dominion.
 Dom. Econ. Domestic Economy.
 Dom. Prel. Domestic Prelate.
 Doz. Dozen.
 D. P. Doctor of Philosophy. [See P. D. and Ph. D.]
 D. P. O. Distributing Post Office.
 Dpt. Deponent.
 Dr. Debtor, Doctor, Dram.
 Dram. Pers. Dramatis Personæ.
 d/s. Days' Sight.
 D. S. (*Dal Segno.*) From the sign.
 D. S. Dekastere (metric system).
 D. Sc. Doctor of Science.
 D. T. Dakota Territory.
 D. V. (*Deo volente.*) God willing.
 Dwt. (*Lat. Denarius* and *Eng. weight.*) Pennyweight, or Pennyweights.
 E. or ε. (*Ερσιλον.*) Greek E, e.
 E. East, Eastern, Earl, Edinburgh, Erbium.
 Ea. Each.
 Eb. Erbium.
 E. B. English Bible.
 Eben. Ebenezer.
 E. by S. East by South.
 Ebor. (*Eboracum.*) York. (*Eboracensis.*) Of York.
 E. C. Eastern Central (Postal District, London), Established Church.
 Eccl. Ecclesiastes, Ecclesiastical.
 Eccl. Hist. Ecclesiastical History.
 Ecclus. Ecclesiasticus.
 Ed. Editor, Edition.
 E. D. Eastern District (of Brooklyn, N. Y.).
 Edin. Edinburgh.
 Edit. Edition.
 Edm. Edmund.
 Eds. Editors.
 Edw. Edward, Edwin.
 E. E. and M. P. Envoy Extraordinary and Minister Plenipotentiary.

ABBREVIATIONS.

E. Fl. Ells Flemish.
 E. Fr. Ells French.
 eg., or ex. gr. (*exempli gratia*.)
 For example.
 Egypt. Egyptians.
 E. I. East Indies, or East India.
 E. I. C., or E. I. Co. East India Company.
 E. I. C. S. East India Company's Service.
 Eliz. Elizabeth.
 E. Long. East Longitude.
 E. M. Mining Engineer. (*Equitum Magister*.) Master of the Horse.
 Em. Emma, Emily, Emmanuel.
 Emp. Emperor, Empress, Empire.
 Ency., or Encyc. Encyclopædia.
 Encyc. Amer. Encyclopædia Americana.
 Encyc. Brit. Encyclopædia Britannica.
 E. N. E. East-Northeast.
 Eng. England, English.
 Eng. Cyc. English Cyclopædia.
 Engin. Engineering.
 Eng. in Chf. Engineer-in-Chief.
 Ens. Ensign.
 Ent., or Entom. Entomology.
 Env. Ext. Envoy Extraordinary.
 Ep. Epistle.
 Eph. Ephesians, Ephraim.
 Ephes. Ephesians.
 Epis. Episcopal.
 Eq. Equal, Equivalent.
 Equiv. Equivalent.
 E. S. Ells Scotch.
 Esd. Esdras.
 E. S. E. East-Southeast.
 Esp. Especially.
 Esq., or Esqr. Esquire.
 Esq., or Esqs. Esquires.
 Est. Estate, Estimate.
 Estab. Established, Establishment.
 Esth. Esther.
 E. T. English Translation.
 et al. (*Et alii*, or *alii*.) And others. (*Et alibi*.) And elsewhere (sometimes improperly written, *et als*.)
 Etc., or &c. (*Et cæteri*, *cætera*, or *cætera*.) And other things, and so forth.
 Eth. Ethiopic.
 et seq. (*Et sequentia*, or *et sequentes*.) And what follows, and the following.
 Etym. Etymology.
 Evang. Evangelical, Evangelist.
 Ex. Example, Exception, Exodus.
 Exc. Excellency, Exception.
 Exch. Exchequer, Exchange.
 Ex. cp., or xcp. Excoupon.
 Ex. d., or x/d. Exdividend.
 Exec. Executor.
 Exec. Com. Executive Committee.
 Execx. Executrix.

ex. g. (*exempli gratia*.) For example.
 Exod. Exodus.
 Exon. (*Exonia*.) Exeter.
 Exr., or Exx. Executor, Executrix.
 Ez. Ezra.
 Ezek. Ezekiel.
 F. France, Folio, Fellow, Fluorine, Friday, Fahrenheit.
 F. Feminine, Franc, Francs, Florin, Florins, Farthing, Farthings, Foot, Feet.
 F. A. A. Free of all Average.
 F. A. A. S. Fellow of the American Association for the Advancement of Science.
 Fahr. Fahrenheit.
 Fair. Fairfield, Fairhaven, Fairmont, Fairview.
 F. A. M. Free and Accepted Masons.
 F. A. S. Fellow of the Antiquarian Society.
 F. A. S. E. Fellow of the Antiquarian Society of Edinburgh.
 F. B. S. Fellow of the Botanical Society.
 F. C. Free Church (of Scotland).
 Fcap., or fcp. Foolscap.
 F. C. P. Fellow of College of Preceptors.
 F. C. P. S. Fellow of the Cambridge Philosophical Society.
 F. C. S. Fellow of the Chemical Society.
 F. D. (*Fidei Defensor*, or *Defensatrix*.) Defender of the Faith.
 Fe. (*Ferrum*.) Iron.
 F. E. Flemish Ells.
 Feb. February.
 Fec. (*Fecit*.) He did it.
 F. E. I. S. Fellow of the Educational Institute of Scotland.
 Fem. Feminine.
 Fem. Ac., or Acad. Female Academy.
 F. E. S. Fellow of the Entomological Society, Fellow of the Ethnological Society.
 Feud. Feudal.
 F. F. P. S. Fellow of the Faculty of Physicians and Surgeons (Glasgow).
 F. F. V. First Families of Virginia (humorous).
 ff. Following.
 F. G. A. Foreign General Average.
 F. G. S. Fellow of the Geological Society.
 F. H. S. Fellow of the Horticultural Society.
 Fid. Def. (*Fidei Defensor*, or *Defensatrix*.) Defender of the Faith.
 fi. fa. (*Fieri facias*.) Cause it to be done.
 Fig. Figure, Figures, Figurative, Figuratively.
 Finn. Finnish.
 Fir. Firkin.

ABBREVIATIONS.

- F. K. Q. C. P. I.** Fellow of King and Queen's College of Physicians in Ireland.
Fl. Flemish, Flourished, Florin, Florida.
Fla. Florida.
Fl. E. Flemish Ella.
Flor. Florence.
F. L. S. Fellow of the Linnæan Society.
F. M. Field-marshal.
Fo., or fol. Folio.
F. O. Field-officer.
F. O. B. Free on Board.
For. Foreign.
For. Sec. Foreign Secretary.
Fort. Fortification.
F. P. A. Free of Particular Average.
F. P. S. Fellow of the Philological Society.
Fr. Franc, Francs, French, France, Fragment, Francis, Friar, Frank.
fr. From.
Frankl. Inst. Franklin Institute, Philadelphia.
F. R. A. S. Fellow of the Royal Astronomical Society.
F. R. C. P. Fellow of the Royal College of Physicians; E., of Edinburgh.
F. R. C. S. Fellow of the Royal College of Surgeons; E., of Edinburgh; I., of Ireland; L., of London.
Fr. E. French Ells.
Fred. Frederick.
Freq. Frequentative.
F. R. G. S. Fellow of the Royal Geographical Society.
Fri. Friday.
F. R. S. Fellow of the Royal Society.
F. R. S. S. A. Fellow of the Royal Scottish Society of Arts.
Frs. Frisian, or Frisic.
F. R. S. E. Fellow of the Royal Society, Edinburgh.
F. R. S. L. Fellow of the Royal Society, London, Fellow of the Royal Society of Literature.
F. S. A. Fellow of the Society of Arts, or of Antiquaries; I., of Ireland; L., of London.
F. S. A. E. Fellow of the Society of Antiquaries, Edinburgh.
F. S. S. Fellow of the Statistical Society.
Ft. Fortification.
Ft. Foot, Feet, Fort.
F. T. C. D. Fellow of Trinity College, Dublin.
Fth. Fathom.
Fur. Furlong.
Fut. Future.
F. Z. S. Fellow of the Zoological Society.
Γ, or γ. (Gamma.) Greek G, g.
G. Glucinum, Genitive.
G. Guineas, Guinea, Gulf.
G. A. General Assembly.
Ga. Georgia.
Gael. Gaelic.
Gal. Galatians, Galen.
Gal. Gallon, Gallons.
Galv. Galvanism, Galvanic.
G. A. R. Grand Army of the Republic.
G. B. Great Britain.
G. B. & I. Great Britain and Ireland.
G. C. Grand Chancellor, Grand Conductor, Grand Chapter.
G. C. B. Grand Cross of the Bath.
G. C. H. Grand Cross of Hanover.
G. C. L. H. Grand Cross of the Legion of Honor.
G. C. M. G. Knights Grand Cross St. Michael and St. George.
G. C. S. I. Knight Grand Commander of the Star of India.
G. D. Grand Duke, Grand Duchess.
G. E. Grand Encampment.
Gen. Genesis, General.
Gen. Genitive, Generally.
Gent. Gentleman.
Gent. Mag. Gentlemen's Magazine.
Geo. George, Georgia.
Geog. Geography, Geographer.
Geol. Geology, Geological, Geologist.
Geom. Geometry, Geometer.
Geor. Hist. Soc. Georgia Historical Society.
Ger. Gerund.
Ger. German, Germany.
G. F. G. Governor's Foot Guard.
G. H. G. Governor's Horse Guard.
Gl. Gills.
G. L. Grand Lodge.
Gl. (Glossa.) A Gloss.
G. M. Grand Master.
G. M. P. K. Grand Master of the Knights of St. Patrick.
G. O. General Order.
Go., or Goth. Gothic.
Gov. Governor.
Gov.-Gen. Governor-General.
G. P. (Gloria Patri.) Glory to the Father.
G. P. O. General Post-Office.
G. R. (Georgius Rex.) King George, Grand Recorder.
Gr. Greek, Gross, Great.
Gr. Grain or grains.
Gram. Grammar.
Gro. Gross.
G. S. Grand Secretary, Grand Sentry, Grand Sentinel.
G. T. Good Templars, Grand Tyler.
Gtt. (Gutta, or guttæ.) Drop, or drops.
Gun. Gunnery.
H. or η. (Eta.) Greek e long.
H. Hydrogen.
H. Hour, Height, High, Harbor, Husband.
H., or hr. Hour, hours.
h. a. (Hoc anno.) This year.
Ha. Hektare (metric system).

ABBREVIATIONS.

- Hab.** **Habakkuk.**
Hab. corp. (*Habeas corpus.*)
 You may have the body.
Hab. fa. poss. (*Habere facias possessionem.*) (*law.*) A writ to put the plaintiff in possession.
Hag. **Haggai.**
Ham. Coll. **Hamilton College.**
Hants. **Hampshire.**
H. B. C. **Hudson's Bay Company.**
H. B. M. **His (or Her) Britannic Majesty.**
H. C. **House of Commons, Herald's College.**
H. C. M. **His (or Her) Catholic Majesty.**
Hdkf. **Handkerchief.**
H. E. **His Eminence, Hydraulic Engineer.**
h. e. (*Hoc est, or Hic est.*) That is, or this is.
Heb., or Hebr. **Hebrew, Hebrews.**
Hectol. **Hectolitre (metric system).**
H. E. I. C. **Honorable East India Company.**
H. E. I. C. S. **Honorable East India Company's Service.**
Her. **Heraldry.**
Herp. **Herpetology.**
H. F. **Holy Father.**
Hf.-bd. **Half-bound.**
Hf. cf. **Half calf.**
Hg. (*Hydrargyrum.*) **Mercury.**
H. G. **Horse Guards.**
H. H. **His Holiness (the Pope), His (or Her) Highness.**
Hhd. **Hogshead, Hogsheads.**
Hier. (*Hierosolyma.*) **Jerusalem.**
H. I. H. **His (or Her) Imperial Highness.**
Hil. **Hilary.**
Hind. **Hindu, Hindustan, Hindustanee.**
Hist. **History, Historical.**
H. J. S. (*Hic Jacet Sepultus.*) **Here lies buried.**
H. L. **House of Lords.**
Hl. **Hectolitre (metric system).**
H. M. **His (or Her) Majesty.**
H. M. C. **His (or Her) Majesty's Customs.**
H. M. P. (*Hoc monumentum posuit.*) **Erected this monument.**
H. M. S. **His (or Her) Majesty's Steamer, Ship, or Service.**
Ho. **House.**
Hon. **Honorable.**
Hor. **Horace, Horizon.**
Hort. **Horticulture.**
Hos. **Hosea.**
Hosp. Sergt. **Hospital Sergeant.**
Hosp. Stew. **Hospital Steward.**
H. P. **Horse Power, Half-pay, High Priest.**
Hr., Hrn. **Mr., sir; Messrs., gentlemen. (German.)**
H. R. **House of Representatives.**
H. R. E. **Holy Roman Emperor, or Empire.**
H. R. H. **His (or Her) Royal Highness.**
H. R. I. P. (*Hic Requiescit In Pace.*) **Here rests in peace.**
H. S. (*Hic Situs.*) **Here lies.**
H. S. H. **His (or Her) Serene Highness.**
H. S. S. (*Historiæ Societatis Socius.*) **Fellow of the Historical Society.**
h. t. (*Hoc titulo.*) **This title, in or under this title.**
Hum., or Humb. **Humble.**
Hun., or Hung. **Hungary, Hungarian.**
Hund. **Hundred, Hundreds.**
h. v. (*Hoc verbum.*) **This word. (His verbis.) In these words.**
Hy. Art. **Heavy Artillery.**
Hyd. **Hydrostatics.**
Hydraul. **Hydraulics.**
Hydros. **Hydrostatics.**
hypoth. **Hypothesis, hypothetical.**
I, or i. **Iōra. (Iota.) Greek I, i.**
I. **Island, Iodine.**
I, II, III. **One, two, three, or first, second, third.**
Ia. **Iowa.**
Ib., or Ibid. (*Ibidem.*) **In the same place.**
Ice., or Icel. **Iceland, Icelandic.**
I. C. E. **Institution of Civil Engineers.**
Ich., or Ichth. **Ichthyology.**
Icon. Encyc. **Iconographic Encyclopædia.**
I. C. TH. U. S. (*Gr. Iesus Christos, Theou Huios, Soter.*) **Jesus Christ, the Son of God, the Saviour.**
Ictus. (*Iurisconsultus.*) **Counselor at Law.**
Id. **Idaho.**
Id. (Idus.) **Idea.**
Id. (Idem.) **The same.**
Id. Ter. **Idaho Territory.**
I. e. (Id est.) **That is.**
I. G. **Inside Guardian.**
I. H. S. (*Iesus [or Jesus] Homi-num Salvator.*) **Jesus the Saviour of Men.**
ii. **Two.**
Ill. **Illinois.**
Imp. **Imperial. (Imperator.) Emperor.**
Imp., or Imper. **Imperative.**
Imp., or Imperf. **Imperfect.**
Impers. **Impersonal.**
In. **Inch, Inches.**
Inc., or Incor. **Incorporated.**
Incept. **Inceptive.**
Inch. **Inchoative.**
Incog. (Incognito.) **Unknown.**
Ind. **India, Indian, Indiana, Index.**
Ind., or Indic. **Indicative.**
I. N. D. (In Nomine Dei.) **In the name of God.**
Indef. **Indefinite.**
Ind. Meth. **Independent Methodists.**
Indo. Eur. **Indo-European.**

ABBREVIATIONS.

Ind. T., or Ind. Ter. Indian Territory.
 Inf. (*Infra.*) Beneath or below.
 Inf. Infinitive, Infantry.
 in f. (*in fine.*) At the end of the title, law, or paragraph quoted.
 In lim. (*In limine.*) At the outset.
 In loc. (*In loco.*) In the place, on the passage.
 I. N. R. I. (*Iesus* [or *Jesus*] *Nazareus, Rex Judæorum.*) Jesus of Nazareth, King of the Jews.
 Ins. Inspector, Insurance, Instant.
 Insep. Inseparable.
 Insp. Gen. Inspector General.
 Inst. Instant (the present month).
 Inst. Institute, Institutes, Institution.
 Inst. Act. Institute of Actuaries.
 Inst. Bks. Institute of Bankers.
 Inst. C. E. Institution of Civil Engineers.
 Inst. M. E. Institute of Mechanical Engineers.
 Inst. N. A. Institution of Naval Architects.
 In sum. (*In summa.*) In the summary.
 Int. Interest.
 Int. Interpreter.
 Intens. Intensive.
 Interj. Interjection.
 Intr. Introduction.
 Intrans. Intransitive.
 in trans. (*In transitu.*) In the passage.
 Introd. Introduction.
 Inv. Invoice.
 Ioa. Iowa.
 I. O. B. B. Independent Order of B'nai B'rith.
 I. O. F. Independent Order of Foresters.
 I. O. F. S. I. Independent Order of the Free Sons of Israel.
 I. O. G. T. Independent Order of Good Templars.
 Ion. Ionic.
 I. O. O. F. Independent Order of Odd Fellows.
 I. O. R. M. Independent (or Improved) Order of Red Men.
 I. O. S. H. Independent Order Sons of Hermann.
 I. O. S. M. Independent Order of the Sons of Malta.
 I. O. U. I owe you. An acknowledgment for money.
 I. P. D. (*In Præsentia Dominorum.*) In presence of the Lords (of Sessions).
 Ipecac. Ipecacuanha.
 I. q. (*Idem quod.*) The same as.
 Ir. Ireland, Irish, Iridium.
 Iran. Iranian, Iranistan.
 Ire. Ireland.
 I. R. O. Internal Revenue Officer.

Irreg. Irregular.
 I. S. Inside Sentinel, Irish Society.
 Is., or Isa. Isaiah.
 Isl. Island.
 I. S. M. (*Iesus* [or *Jesus*] *Salvator Mundi.*) Jesus the Saviour of the World.
 It. Italy, Italian.
 I. T. Indian Territory, Inner Temple.
 It., or Ital. Italic, Italian, Italy.
 Itin., or Itiner. Itinerant, itinerary.
 IV. Four or Fourth.
 IX. Nine or Ninth.
 J. Justice or Judge, John, Julius, Julian.
 J.J. Justices.
 J/a. Joint Account.
 J. A. Judge Advocate.
 Jac. Jacob.
 J. A. G. Judge Advocate General.
 Jan. January.
 Jas. James.
 J. C. JESUS CHRIST, Justice Clerk.
 J. C. (*Juris Consultus.*) Juris Consult.
 J. C. D. (*Juris Civilis Doctor.*) Doctor of Civil Law.
 J. D. (*Juris Doctor.*) Doctor of Law, Junior Deacon.
 Je. June.
 Jeho. Jehosaphat.
 Jer. Jeremiah, Jerusalem, Jericho, Jersey.
 J. G. W. Junior Grand Warden.
 J. H. S. (*Jesus Hominum Salvator.*) Jesus Saviour of Mankind. (See I. H. S.).
 Jno. John.
 Jnt. Joint.
 Jnt. Stk. Joint Stock.
 Jnt. Stk. Co. Joint Stock Company.
 Jo. Joel.
 Jona. Jonathan.
 Jos. Joseph, Josephine.
 Josh. Joshua.
 Jour. Journal, Journeyman.
 J. P. Justice of the Peace.
 J. Prob. Judge of Probate.
 Jr. Junior.
 J. U. D., or J. V. D. (*Juris Utriusque Doctor.*) Doctor of both Laws, Canon and Civil.
 Jud. Judith.
 Judg. Judges, Judge.
 Judge-Adv. Judge-Advocate.
 Jul. July.
 Jun. June.
 Jun., or junr. Junior.
 Jun. Part. Junior Partner.
 Jus. Justice. (Used to denote Associate Justices.)
 Jus. P. Justice of the Peace.
 Just. Justinian, Justice.
 J. V. D. (*Juris Utriusque Doctor.*) Doctor of both Civil and Canon Law.
 J. W. Junior Warden.

ABBREVIATIONS.

- K.**, or **κ.** *Κάππα.* (*Kappa.*)
 Greek **K**, **k**.
K. King, Knight. (*Kalium.*)
Potassium.
K. A. Knights of St. Andrew
 (in Russia).
Kal. Kalends.
K. A. N. Knight of St. Alexander
 Nevoskoj (in Russia).
Kan. Kansas.
K. B. King's Bench, Knight of
 the Bath (in Great Britain).
K. B. A. Knight of St. Bento d'
 Avis (in Portugal).
K. B. E. Knight of the Black
 Eagle (in Russia).
K. C. Knight of the Crescent
 (in Turkey), King's Council.
K. C. B. Knight Commander
 of the Bath (in Great Britain).
K. C. H. Knight Commander
 of Hanover.
K. C. M. G. Knight Commander
 of St. Michael and St. George.
K. C. S. Knight of Charles III.
 of Spain.
K. C. S. I. Knight Commander
 of the Star of India.
Ken. Kentucky.
Kew Obs. Kew Observatory
 (England).
K. F. Knight of Ferdinand (in
 Spain).
Kg. Kilogram (metric system).
K. G. Knight of the Garter (in
 Great Britain).
K. G. C. Knight Grand Cross
 (in Great Britain), Knight of the
 Golden Circle (in the United
 States).
K. G. C. B. Knight of the Grand
 Cross of the Bath (in Great Britain).
K. G. F. Knight of the Golden
 Fleece (in Spain or Austria).
K. G. H. Knight of the Guelphs
 of Hanover.
K. V. G. Knight of Gustavus
 Vasa (in Sweden).
K. H. Knight of Hanover.
Kl. Kings.
Kil. Kilderkin.
Kilo. Kilogram.
K. J. Knight of St. Joachim.
Kl. Kilolitre (metric system).
K. L., or **K. L. A.** Knight of
 Leopold of Austria.
K. L. H. Knight of the Legion
 of Honor.
Km. Kilometre (metric system).
Km. Kingdom.
K. Mess. King's Messenger.
K. M. Knight of Malta.
K. M. H. Knight of Merit in
 Holstein.
K. M. J. Knight of Maximilian
 Joseph (in Bavaria).
K. M. T. Knight of Maria Theresa
 (in Austria).
K. N. S. Knight of the North
 Star (in Sweden).
Knt. Knight.
K. of H. Knights of Honor.
- K. of P.** Knight, or Knights of
 Pythias.
K. P. Knight of St. Patrick.
Kr. Kreutzer (German coin).
K. R. C. Knight of the Red
 Cross.
K. R. E. Knight of the Red
 Eagle (in Prussia).
Ks. Kansas.
K. S. Knight of the Sword (in
 Sweden).
K. S. A. Knight of St. Anne
 (in Russia).
K. S. B. Kersher Shel Barzel.
K. S. F. Knight of St. Fernando
 (of Spain).
K. S. G. Knight of St. George
 (in Russia).
K. S. H. Knight of St. Hubert
 (in Bavaria).
K. S. I. Knight of the Star of
 India.
K. S. J. Knight of St. Januarius
 (of Naples).
K. S. L. Knight of the Sun and
 Lion (in Persia).
K. S. M. & S. G. Knight of St.
 Michael and St. George.
K. S. P. Knight of St. Stanisla
 (in Poland).
K. S. S. Knight of the Southern
 Star (in Brazil).
K. S. W. Knight of St. Wladimir
 (in Russia).
K. T. Knight Templar, Knight
 of the Thistle (in Scotland).
Kt. Knight.
K. T. S. Knight of the Tower
 and Sword (in Portugal).
K. W. Knight of William (in
 the Netherlands).
K. W. E. Knight of the White
 Eagle (in Poland).
Ky. Kentucky.
Λ, or **γ.** *Δαμβδα.* (*Lambda*)
 Greek **L**, **l**.
L. Fifty or fiftieth, Laity,
 Latin, Low, Lord, London (after
 titles), Lithium, (*Liber.*) Book.
L. League, Leagues, Lake,
 Lane.
L., l., or lb. (*Libra.*) A pound
 in weight.
L., £, or l. (*Libra, or Libræ.*)
 Pound, or Pounds sterling.
L., or £, s. d. (*Libræ, solidi,*
denarii.) Pounds, shillings, and
 pence.
La. Louisiana, Lanthanum.
L. A. C. Licentiate of the
 Apothecaries' Company.
L. A. H. Licentiate of the
 Apothecaries' Hall.
Ladp. Ladyship.
Lam. Lamentations.
Lapp. Lappish.
L. A. S. Lord Advocate of
 Scotland.
Lat. Latitude, Latin.
Lb. (*Libra, or Libræ.*) Pound
 or pounds in weight.
l. c. Lower case (in printing).
l. c. (*loco citato.*) In the place
 before cited.

ABBREVIATIONS.

- L/C. Letter of Credit.
 L. C. Lord Chancellor, Lord Chamberlain, Lower Canada.
 L. C. B. Lord Chief Baron.
 L. C. J. Lord Chief Justice.
 Ld. Lord.
 L. D. Lady Day, Light Dragoons.
 Ldp., Lp. Lordship.
 Lea. League.
 Leg. (*Legato*.) Smoothly, Legate.
 Leg., or Legis. Legislature.
 Leip. Leipsic, or Leipzig.
 Lett. Lettish.
 Lev., or Levit. Leviticus.
 Lex. Lexicon, Lexicographer, Lexington.
 L. G. Life Guards, Low German.
 L. H. A. Lord High Admiral.
 L. H. C. Lord High Chancellor.
 L. H. D. (*Literarum Humaniorum Doctor*.) Doctor of Polite Literature.
 L. H. T. Lord High Treasurer.
 L. I. Long Island, League Island, Light Infantry.
 Li. Lithium.
 Lib. (*Liber*.) Book.
 Lib. Library, Librarian.
 Lieut., or Lt. Lieutenant.
 Lieut. Col. Lieutenant Colonel.
 Lieut. Gen. Lieutenant General.
 Lieut. Gov. Lieutenant Governor.
 Linn. Linnæan, Linnæus.
 Linn. Soc. Linnæan Society (London).
 Liq. Liquor.
 Lit. Literature, Literary.
 Lit. Literally.
 Lit. D. (*Literarum Doctor*.) Doctor of Letters.
 Lith. Lithuanian.
 Liv. Livre.
 L. L. Low Latin, Late Latin.
 L. Lat. Low Latin, Law Latin.
 LL. B. (*Legum Baccalaureus*.) Bachelor of Laws. [See B. L. and B. LL.]
 LL. D. (*Legum Doctor*.) Doctor of Laws. [See B. LL.]
 L. L. I. Lord Lieutenant of Ireland.
 LL. M. (*Legum Magister*.) Master of Laws.
 loc. cit. (*loco citato*.) In the place cited.
 Lon. Longitude.
 Lon., or Lond. London.
 Long. Longitude.
 Lou., or La. Louisiana.
 Lp., or Ldp. Lordship.
 L. P. Lord Provost.
 L. P. S. Lord Privy Seal.
 L. R. C. P. Licentiate of the Royal College of Physicians.
 L. R. C. S. Licentiate of the Royal College of Surgeons.
 L. S. Left Side. (*Locus Sigilli*.) Place of the Seal.
 L. S. A. Licentiate of the Apothecaries' Society.
 L. S. D. (*Libræ, Solidi, Denarii*.) Pounds, Shillings, Pence.
 L. T. (*Lira Turca*.) The Turkish Pound.
 Lt., or Lieut. Lieutenant.
 Lt. Batt. Light Battery.
 Lt., or Lieut. Com. Lieutenant Commander.
 Lt., or Lieut. Gen. Lieutenant General.
 Lt. Inf., or Infy. Light Infantry.
 Lv. Livre, Livres.
 LX. Sixty or sixtieth.
 LXX. Seventy or seventieth.
 LXX. The Septuagint (Version of the Old Testament).
 LXXX. Eighty or eightieth.
 M, or μ . Mō. (*Mu*.) Greek M, m.
 M. Monday, Middle, Morning, Monsieur. (*Meridies*.) Meridian, or Noon. (*Mille*.) Thousand.
 m. Married, Metre (metric system).
 M. Moon, Masculine. Minute, Minutes, Month, Months, Mile, Miles, Mill, Mills. (*Misce*.) Mix. (*Mistura*.) Mixture. (*Mensura*.) Measure, by Measure.
 M. Minim.
 —/M. A thousand; as, e. g., 50/m., fifty thousand.
 M., or Mons. (*Monsieur*.) Sir, Mister.
 M. 10,000.
 M. A. Master of Arts. [See A. M.] Military Academy.
 Mac., or Macc. Maccabees.
 Maced. Macedonian.
 Mach. Machinist, Machinery.
 Mad. Madam.
 Madm. Madam.
 Mad. Univ. Madison University.
 Mag. Magazine.
 Maj. Major.
 Maj. Gen. Major General.
 Mal. Malachi.
 Malay. Malayan.
 Man. Manège, or horsemanship, Manual.
 Man. Manasses.
 M. A. N. S. Member of the Academy of Natural Sciences.
 Manuf. Manufactory, Manufacture, Manufacturing.
 Mar. March.
 March. Marchioness.
 Marg. Margin.
 Marg. Tran. Marginal Translation.
 Marq. Marquis.
 Masc. Masculine.
 Mass. Massachusetts.
 Math. Mathematics, Mathematician.
 Matt. Matthew.
 M. B. (*Medicinæ Baccalaureus*.) Bachelor of Medicine. [See B. M.]
 Mbco. Marks banco.
 M. B. G. et H. (*Magna Britan*

ABBREVIATIONS.

nta, Gallia, et Hibernia.) Great Britain, France, and Ireland.

M. C. Member of Congress, Master of Ceremonies, Master Commandant, Master of the Classics.

M/C. Metallic Currency.

Mch. March.

M. D. (*Medicines Doctor*.) Doctor of Medicine.

Md. Maryland.

M/d. Month's date.

M. E. Middle English (etymological).

M. E. Methodist Episcopal, Military or Mechanical Engineer, Most Excellent.

M. E. S. Methodist Episcopal South.

Me. Maine.

Meas. Measure.

Mech. Mechanics, Mechanical.

Med. Medicine.

Med. Dir. Medical Director.

M. E. G. H. P. Most Excellent Grand High Priest.

Mem. Memorandum, Memoranda. (*Memento*.) Remember.

Mer. Meridian.

Merc. Mercury.

Messrs., or MM. (*Messieurs*.) Gentlemen, or Sirs.

Met. Metaphysics, metaphor, Metaphorically, Metropolitan.

Metal. Metallurgy.

Metaph. Metaphysics.

Meteor. Meteorology.

Meth. Methodist.

Metr., or Metrop. Metropolitan.

Mex. or Mexic. Mexico or Mexican.

M. ft. (*Mistura fiat*.) Let a mixture be made.

mg. Milligram (metric system).

Mg. Magnesium, Myriagram (metric system).

M. G. Major General.

M. G., or M. Goth. Mœsco-Gothic.

M. H. G. Middle High German (Etymological).

M. Hon. Most Honorable.

M. H. S. Massachusetts Historical Society, Member of the Historical Society.

Mi. Mississippi.

Mill. Mills.

Mic. Micah.

M. I. C. E. Member of the Institution of Civil Engineers.

Mich. Michigan.

Mid. Midshipman.

Mid. Middle (voice).

Mill. Military.

Min. Mineralogy.

Min. Minute, Minutes.

Minn. Minnesota.

Min. Plen. Minister Plenipotentiary.

Min. Res. Minister Resident.

Miss. Mississippi.

ml. Millilitre (metric system).

ml. Myrialitre (metric system).

M. L. (*Legum Magister*.) Master of Laws.

M. L. A. Mercantile Library Association.

Mlle. Mademoiselle.

mm. Millimetre (metric system).

Min. Myriametre (metric system).

MM. Their Majesties. (*Messieurs*.) Gentlemen, or Sirs.

NOTE.—The initial letter of a word is sometimes doubled to signify the plural; as in LL. B., LL. D.

MM. Thousands.

Mme. Madame.

Mmes. Mesdames (pronounced *mādām'*).

M. M. S. Moravian Missionary Society.

M. M. S. S. Member of the Massachusetts Medical Society.

Mn. Manganese.

M. N. A. S. Member of the National Academy of Sciences.

M. N. S. Member of the Numismatical Society.

Mo. Missouri, Month, Molybdenum.

Mod. Modern. (*Moderato*.) Moderately.

Mon. Monday, Monastery.

Mond. Monday.

Mons. Monsieur, or Sir.

Monsig. Monsignor.

Morn. Morning.

Mos. Months.

Most. Rev. Most Reverend.

Mon. Ter. Montana Territory.

M. P. Member of Parliament, Metropolitan Police, Municipal Police, Methodist Protestant, or Protestant Methodist.

M. P. C. Member of Parliament in Canada.

M. P. P. Member of Provincial Parliament.

M. P. S. Member of the Pharmaceutical (or of the Philological) Society.

M. R. Master of the Rolls.

Mr. Mister, or Master.

M. R. A. S. Member of the Royal Asiatic Society, Member of the Royal Academy of Science.

M. R. C. C. Member of the Royal College of Chemistry.

M. R. C. P. Member of the Royal College of Physicians.

M. R. C. S. Member of the Royal College of Surgeons.

M. R. G. S. Member of the Royal Geographical Society.

M. R. I. Member of the Royal Institution.

M. R. I. A. Member of the Royal Irish Academy.

Mrs. Mistress (pronounced *mī'sis* when written as an abbreviation).

M. R. S. L. Member of the Royal Society of Literature.

M/S. Month's sight.

ABBREVIATIONS.

- M. S.** (*Memoria Sacrum.*) Sacred to the memory.
M. S. (*Magister Scientia.*) Master of Science.
MS. (*Manuscriptum.*) Manuscript.
MSS. (*Manuscripta.*) Manuscripts.
Mt. Mount, or Mountain.
M. T. C. Marcus Tullius Cicero.
Mt. Rev. Most Reverend.
Mts. Mountains.
Mus. Museum, Music.
Mus. B. Bachelor of Music.
Mus. D., Mus. Doc., or Mus. Doct. Doctor of Music.
M. W. Most Worthy, Most Worshipful.
M. W. G. C. P. Most Worthy Grand Chief Patriarch.
M. W. G. M. Most Worthy (or Worshipful) Grand Master.
M. W. P. Most Worthy Patriarch.
M. W. S. Member of the Wernerian Society.
M. W. V. Mexican War Veterans.
Myth. Mythology.
N, or v. Nv. (Nu.) Greek N, n.
N. North, Number, Note, Name, New, Nitrogen, Northern.
N. Noun, Neuter.
N. A. North America, North American, National Academician.
N. A. S. National Academy of Sciences.
Na. (Natrium.) Sodium.
Nah. Nahum.
Nap. Napoleon.
Nat. Natural, National.
Nat. Hist. Natural History.
Nath. Nathanael, or Nathaniel.
Nat. ord. Natural order.
Naut. Nautical.
Nav. Navigator, Navy.
Nav. Con. Navy Constructor.
N. B. New Brunswick, North Bristol, North Britain. (*Nota bene.*) Note well, or take notice.
N. C. North Carolina.
N. D. No Date.
N. E. New England, Northeast, Northern Eastern.
Neb. Nebraska.
Neg. Negative.
Neh. Nehemiah.
n. e. i. (*Non est inventus.*) He is not found.
Nem. Con. (*Nemine Contradicente.*) No one contradicting, unanimously.
Nem. Diss. (*Nemine Dissentiente.*) No one dissenting, unanimously.
Neut. Neuter (gender).
Nev. Nevada.
New Am. Cyc. New American Cyclopædia.
New M. New Mexico.
New Test. New Testament.
N. F. Newfoundland.
N. G. New Granada, Noble Grand.
N. H. New Hampshire.
N. H. H. S. New Hampshire Historical Society.
Ni Nickel.
Ni. pri. Nisi Prius (law).
N. J. New Jersey.
N. L. (*Non liquet.*) It does not appear, the case is not clear.
N. L., or N. Lat. North Latitude.
N. M., or N. Mex. Ter. New Mexico Territory.
N. N. E. North-Northeast.
N. N. W. North-Northwest.
N. O. New Orleans.
No. (Numero.) Number.
Nol. pros. (*Nolle prosequi.*) Unwilling to prosecute, or proceed.
Nom. Nominative.
Non Con. Not content, dissenting, dissentient (House of Lords).
Non cul. (*Non culpabilis.*) Not guilty.
Non obst. (*Non obstante.*) Notwithstanding.
Non pros. (*Non prosequitur.*) He does not prosecute,—a judgment entered against the plaintiff when he does not appear to prosecute.
Non seq. (*Non sequitur.*) It does not follow.
Nor. Fr., or Norm. Fr. Norman French.
Norw. Norway, Norwegian.
Nos. Numbers.
Nov. November.
N. P. Notary Public.
N. P. D. North Polar Distance.
N. R. North River.
N. S. New Style (since 1752), Nova Scotia, (*Notre Seigneur*) Our Lord, Numismatic Society.
N. S. J. C. (*Notre Seigneur Jésus-Christ.*) Our Lord Jesus Christ.
N. T. New Testament, New Translation.
N. u. Name, or names, unknown.
Num. Numeral.
Num., or Numb. Numbers.
Numis. Numismatics.
Nux vom. Nux vomica.
N. V. M. Nativity of the Virgin Mary.
N. W. Northwestern.
N. W. T. Northwest Territory.
N. Y. New York.
N. Y. H. S. New York Historical Society.
N. Z., or N. Zeal. New Zealand.
Ω. or ω. Omega. (*Omega.*) The great or long O, o, of the Greek alphabet.
Ο. or ο. Omicron. (*Omicron.*) Greek O, o.
O. Ohio, Old, Oxygen. (*Octarius.*) A pint.
Ob. (obiit.) He or she died.
Obad. Obadiah.

ABBREVIATIONS.

Obj. Objective, Objection, Ob- ject.	P. Page, Part, Participle, Pole, Phosphorus, Pint, Pope.
Obs. Obsolete, Observation.	P. (Père.) Father.
Obt., or Obdt. Obedient.	p. a. Participial adjective.
O. C. C. (<i>Ordinis Carmelita- rum Calceatorum.</i>) Carmelites Calced.	P. A. Post Adjutant.
O. C. D. (<i>Ordinis Carmelita- rum Discalceatorum.</i>) Carmel- ites Discalced.	P. A. E. Passed Assistant En- gineer.
O. Cist. (<i>Ordinis Cisterciensis.</i>) Cistercian.	Paint. Painting.
Oct. October.	Pal., or Paleon. Paleontology.
O. F. Odd Fellow or Odd Fel- lows, Old French (etymological)	P. A. P. M. Passed Assistant Paymaster.
O. G. Outside Guardian.	Par., or ¶. Paragraph.
O. H. G. Old High German (etymological).	Par., or |. Parallel.
O. H. M. S. On His (or Her) Majesty's Service.	Parl. Parliament, Parliament- ary.
O. K. (Oll Korect.) All right, or correct.	Paroch. Lib. Parochial Li- brary.
Ol. (<i>Oleum.</i>) Oil.	Par. Pas. Parallel Passage.
Ol., or Olymp. Olympiad.	Part. Participle.
Old Test., or O. T. Old Testa- ment.	Pass. Passive.
Olym. Olympiad.	Pass. Passionist.
O. M. Old Measurement.	Past. Pastor.
O. M. Conv. (<i>Ordinis Minorum Conventualium.</i>) Minor Convent- uals.	P. A. Surg. Passed Assistant Surgeon.
O. M. I. Oblates of Mary Im- maculate.	Pathol. Pathology.
O. Min. Cap. (<i>Ordinis Minorum Capucinatorum.</i>) Capuchins.	Pay Dir. Pay Director.
Ont. Ontario.	Pay Ins. Pay Inspector.
O. P., or O. S. D. (<i>Ordinis Præ- dicatorum, or Ordinis Sancti Do- minici.</i>) Dominicans.	Pay M. Paymaster.
Opt. Optics.	Payt. Payment.
Or. Oregon.	Pb. (<i>Plumbum.</i>) Lead.
O. R. C. Order of the Red Cross.	P. B. (<i>Philosophiæ Baccalau- reus</i>) Bachelor of Philosophy.
Ord. Ordnanoe, Ordinance,	Φ. B. K. (Φι. Βήτα, Κάππα.) Phi Beta Kappa (College Society).
Ordinary.	P. C. (<i>Patres Conscripti.</i>) Con- script Fathers, Senators, Privy Council, or Councilor, Police Con- stable, Principal Conductor, Post Commander.
Ord. Dept. Ordinance Depart- ment.	P. C. P. Past Chief Patriarch.
Orig. Original, Originally.	P Cyc. Penny Cyclopedic.
Ornith. Ornithology.	P. D. (<i>Philosophiæ Doctor.</i>) Doctor of Philosophy.
O. S. Old Style (before 1752), Outside Sentinel.	Pd. Paid, Palladium.
Os. Osmium.	Ψ. E. (Ψι Εψιλον.) Psi Epsilon (College Society).
O. S. A. (<i>Ordinis Sancti Au- gustini.</i>) Augustinians.	P. E. Protestant Episcopal, Presiding Elder.
O. S. B. (<i>Ordinis Sancti Bene- dicti.</i>) Benedictines.	Pe. Pelopium.
O. S. F. (<i>Ordinis Sancti Fran- cisci.</i>) Franciscans.	P. E. I. Prince Edward Island.
O. T. Old Testament.	Penn. Pennsylvania.
O. U. A. Order of United Americans.	Pent. Pentecost.
Oxf. Oxford.	Per., or Pers. Persia, Persian.
Oxf. Gloss. Oxford Glossary of Architecture.	Per, pr., or ₧. By the, or per lb., oz., etc.
Oxon. (<i>Oxonian.</i>) Of Oxford, at Oxford.	Per an. (<i>Per annum.</i>) By the year.
Oz. Ounce.	Per cent., or per ct. (<i>Per cen- tum.</i>) By the hundred.
Π, or π. Πι. (Πι.) Greek P, p.	Perf. Perfect.
P. (<i>Pondere.</i>) By weight. (<i>Pu- gillus.</i>) A pugil, the quantity of any substance which may be ta- ken with the ends of the thumb and two fingers.	Perh. Perhaps.
	Perl. Perigee.
	Pers. Person.
	Persp. Perspective.
	Peruv. Peruvian.
	Pet. Peter.
	P. G. Past Grand.
	Pg. Portuguese.
	Phar. Pharmacy.
	Phar. D. Doctor in Pharmacy.
	Phar. G. Graduate in Phar- macy.
	Phar. M. Master in Pharmacy.

ABBREVIATIONS.

- Ph. B. (*Philosophiæ Baccalaureus*.) Bachelor of Philosophy.
 Ph. D. (*Philosophiæ Doctor*.) Doctor of Philosophy.
 Phil. Philip, Philippians, Philosophy, Philosopher, Philosophical, Philemon.
 Phil., or Phila. Philadelphia.
 Philem. Philemon.
 Philomath. (*Philomathematicus*.) A lover of mathematics.
 Philos. Philosophy.
 Phil. Trans. Philosophical Transactions.
 Phonog. Phonography.
 Photog. Photography.
 Phren. Phrenology.
 P. H. S. Pennsylvania Historical Society.
 Phys. Physics, Physiology, Physician.
 Physiol. Physiology.
 Pinx., or pxt. (*Pinxit*.) He (or she) painted it.
 P. J. President Judge, Police Justice.
 Pk. Peck.
 Pks. Pecks.
 P. L. Poet Laureate.
 Pl. Place, Plate.
 Pl., or plur. Plural.
 P. L. C. Poor Law Commissioners.
 Plff. Plaintiff.
 Plin. Pliny.
 Plup., or plupf. Pluperfect.
 Plur. Plural.
 Pm. Premium.
 P. M. (*Postmeridian*.) Afternoon, Evening.
 P. M. Post Master, Passed Midshipman, Pay Master, Past Master.
 P. M. G. Post Master General, Pay Master General.
 P/N. Promissory Note.
 P. O. Post-Office.
 P. O. D. Post-Office Department.
 Poet. Poetry, Poetical.
 P. O. H. Patrons of Husbandry.
 P. of H. Patrons of Husbandry.
 Po. Pole.
 Pol. Polish.
 Polit. Econ. Political Economy.
 P. O. O. Post-Office Order.
 Pop. Population.
 Port. Portugal, Portuguese.
 Pos., or Poss. Possessive.
 Pp. (or PP.) Patres, Fathers.
 P. P. (*Pater Patriæ*.) The father of his country.
 P. P. Parish Priest.
 Pp. Pages.
 p. p. Past participle.
 P. P. C. (*Pour Prendre Congé*.) To take leave.
 Pph. Pamphlet.
 P. P. I. Policy proof of interest.
 p. pr. Participle present.
 P. Q. Previous question.
 Pr. Priest, Prince.
 Pr. Preposition, Prince, Pronoun.
 Pr., or P. (*Per*.) By the.
 P. R. (*Populus Romanus*.) The Roman people, Prize ring, Porto Rico.
 P. R. A. President of the Royal Academy.
 P. R. C. (*Post Romam Conditam*.) After the building of Rome.
 Preb. Prebend, Prebendary.
 Pref. Preface, Prefix.
 Prep. Preposition.
 Pres. President.
 Pres. Present.
 Presb. Presbyterian.
 Pret. Preterit.
 Prim. Primate, Primitive.
 Prin. Principles.
 prin. Principally.
 Print. Printing.
 Priv. Privative.
 Priv. Chamb. Private Chamberlain.
 Prob. Problem, Probably.
 Prof. Professor.
 Pron. Pronoun, Pronounced, Pronunciation.
 Pron. a. Pronominal adjective.
 Prop. Proposition, Properly.
 Prot. Protestant.
 Prot. Ap. Prothonotary Apostolic.
 Pro. tem. (*Pro tempore*.) For the time.
 Prov. Proverbs, Proverbially, Provost, Provincial.
 Prov. Mar. Provost Marshal.
 Prov. Sem. Provincial Seminary.
 Prox. (*Proximo*.) Next, or of the next month, in the next.
 Prus. Prussia, Prussian.
 P. S. (*Postscriptum*.) Postscript, Permanent Secretary, Privy Seal.
 Ps., or Psa. Psalm, or Psalms.
 Pss. Postscripts.
 Pt. Part, Pint, Payment, Port, Point.
 Pt. Platinum.
 P. t. (*Pro tempore*.) For the time.
 P. T. O. Please turn over.
 Ψ. Y. (*Ψι Υψιλόν*.) Psi Upsilon (College Society).
 Pub. Publisher, Publication, Public, Published.
 Pub. Doc. Public Documents.
 Pulv. (*Pulvis*.) Powder.
 Pun. Punchoon.
 P. v. Post-village.
 P. W. P. Past Worthy Patriarch.
 Pwt. Pennyweight, Pennyweights.
 Pxt. (*Pinxit*.) He (or she) painted it.
 Q. Question, Quintus.
 Q. (*Quadrans*.) One-fourth part.
 Q., or Qu. Queen, Question, Query, Quintius, Quintus.
 Q. B. Queen's Bench.
 Q. C. Queen's College, Queen's Counsel, or Council.

ABBREVIATIONS.

Q. d. (*Quasi dicat.*) As if he should say. (*Quasi dictum.*) As if said. (*Quasi dixisset.*) As if he had said.

Q. e. (*Quod est.*) Which is.

Q. E. D. (*Quod Erat Demonstrandum.*) Which was to be demonstrated, or proved.

Q. L. (*Quantum libet.*) As much as you please.

Qm. (*Quomodo.*) By what means.

Q. M. Quarter Master.

Q. Mess. Queen's Messenger.

Q. M. G. Quarter Master General.

Q. P., or q. pl. (*Quantum placet.*) As much as you please.

Qr. Quarter (28 lb.), Farthing, Quire.

Qrs. Quarters, Quires, Farthings.

Q. S. Quarter Sessions.

Q. S. Quarter Section. (*Quantum sufficit.*) Sufficient quantity.

Qt. Quart, Quantity.

Qts. Quarts.

Qu. Queen, Question.

Qu., or qy. (*Quere.*) Inquire, Query.

Quad. Quadrant, Quadrant.

Quar. Quarterly.

Ques. Question.

Q. v. (*Quod vide.*) Which see. (*Quantum vis.*) As much as you please.

Qy. Query.

ρ, or ρ. Pō. (*Rho.*) Greek R, r.

R. (*Recipe.*) Take.

R. Response (in church books).

R. (*Regina.*) Queen. (*Rex.*)

King. Railway, Rhodium, Rises, River, Residence.

R. Rood, Roods, Rod, Rods.

R. A. Royal Academy, Royal Academician, Royal Arch, Royal Artillery, Rear Admiral, Right Ascension.

R. A. C. Royal Arch Chapter.

Rad. (*Radix.*) Root, Radical.

R. Adml. Rear Admiral.

R. A. K. T. P. Royal Arch Knight Templar Priest.

R. A. M. Royal Ark Mariners, Royal Academy of Music.

Rb. Rubidium.

R. C. Roman Catholic.

R. D. Royal Dragoons.

R. D., or Rur. Dn. Rural Dean.

R. E. Royal Engineers, Royal Exchange, Right Excellent, Reformed Episcopal.

Rec. Recorder.

Rec., or R. Recipe.

Recd. Received.

Recpt. Receipt.

Rec. Sec. Recording Secretary.

Rect. Rector, Receipt.

Ref. Reference, Reformed.

Ref. Ch. Reformed Church.

Reg., or Regr. Register, Registrar, Registry.

Reg., or Regt. Regent, Regiment.

Reg. Prof. Regius Professor.

Regr. Registrar.

Regt. Regiment.

Rel. Religion.

Rel. Pron. Relative Pronoun.

Rem. Remark, or Remarks.

Rep. Representative, Report, Reporter, Republican, Republic.

Repub. Republic.

Rev. Reverend, Revelation (Book of), Review, Revenue, Revise.

Revd. Reverend.

Revs. Plural of Reverend.

Rev. Ver. Revised Version (Scriptures).

R. G. G. Royal Grenadier Guards.

R. H. A. Royal Horse Artillery, Royal Hibernian Academy.

Rhet. Rhetoric.

R. H. G. Royal Horse Guards.

R. I. Rhode Island.

R. I. B. A. Royal Institution of British Architects.

Richd. Richard.

R. I. H. S. Rhode Island Historical Society.

Riv. River.

R. M. Royal Marines, Royal Mail, Resident Magistrate.

R. M. A. Royal Military Asylum.

R. M. S. Royal Mail Steamer.

R. N. Royal Navy.

R. N. O. (*Riddare af Nordstjerne Orden*) Knight of the Order of the Polar Star.

Ro. (*Recto.*) Right-hand page.

Ro., or Robt. Robert.

Rom. Roman, Romans (Book of).

Rom. Cath. Roman Catholic.

R. P. Regius Professor, The King's Professor.

R. R. Railroad, Right Reverend.

R. Rs. Railroads.

R. S. Recording Secretary, Right side.

Rs. (*Responsum.*) Answer. (*Respondere.*) To answer.

Rs. Rupees.

R. S. A. Royal Society of Antiquaries, Royal Scottish Academy.

R. S. C. C. Republican State Central Committee.

R. S. D. Royal Society of Dublin.

R. S. E. Royal Society of Edinburgh.

R. S. L. Royal Society of London.

R. S. V. P. (*Répondez, S'il Vous Plait.*) Answer, if you please.

Rt. Hon. Right Honorable.

Rt. Rev. Right Reverend.

Rt. Wpful. Right Worshipful.

Russ. Russia, Russian.

R. V. Revised Version (Scriptures).

R. W. Right Worthy, or Right Worshipful, Railway.

ABBREVIATIONS.

R. W. D. G. M. Right Worshipful Deputy Grand Master.

R. W. G. S. Right Worthy Grand Secretary.

R. W. G. R. Right Worthy Grand Representative.

R. W. G. T. Right Worthy Grand Treasurer, Right Worshipful Grand Templar.

R. W. G. W. Right Worthy Grand Warden.

R. W. J. G. W. Right Worshipful Junior Grand Warden.

R. W. O. (*Riddare af Wasa Orden*.) Knight of the Order of Wasa.

R. W. S. G. W. Right Worshipful Senior Grand Warden.

R'y. Railway.

R'ys. Railways.

Σ, or σ s. Σίγμα. (*Sigma*.) Greek S, s.

S. South, Saint, Scribe, Sulphur, Sign, Sextus. (*Semis*.) Half.

S. Second, Sun, See, Sets, Solo, Section, Series, Singular, Son. (*Solidus*.) A shilling.

S. A. South America, South Africa, South Australia.

Sam. Samuel.

Sans. Sanskrit.

S. A. S. (*Societatis Antiquariorum Socius*.) Fellow of the Society of Antiquaries.

Sat. Saturday.

Sax. Saxon.

Sax. Chron. Saxon Chronicles.

Sb. (*Stibium*.) Antimony.

S. C. (*Senatus Consultum*.) A decree of the Senate, South Carolina, Small Caps.

Sc., or Sculp. (*Sculpsit*.) He (or she) engraved it.

Sc., or scil. (*Scilicet*.) To wit, namely, being understood.

Scan. Mag. (*Scandalum magnatum*.) Defamatory expressions tending to the injury of persons of importance.

S. caps. Small capitals.

S. C. Hist. Soc. South Carolina Historical Society.

Sch., or Schol. (*Scholium*.) A note.

Sch., or schr. Schooner.

Sci. Science.

Sci. fa. (*Scire facias*.) Make known (law).

Scil., or sc. (*Scilicet*.) To wit, namely, being understood.

S. C. L. Student of the Civil Law.

Sclav. Sclavonic.

Scot. Scotland, Scottish, Scotch.

Scr. Scruple.

Script. Scripture, Scriptural.

Sculp. (*Sculpsit*.) He (or she) engraved it.

Sculp., or sculpt. Sculpture.

S. D. (*Salutem dicit*.) Sends health.

S. D. (*Scientiae Doctor*.) Doctor of Science, Senior Deacon.

S. D. U. K. Society for the Diffusion of Useful Knowledge.

S. E. Southeast, Southeastern, Se. Selenium.

Sec. Secretary.

Sec. Second, Section.

Sec. Leg. Secretary of Legation.

Sec. leg. (*Secundum legem*.)

According to law.

Sec. reg. (*Secundum regulam*.)

According to rule.

Secl. Section.

Sen. Senate, Senator, Senior.

Sep., or Sept. September, Septuagint.

Seq., or Sqq. (*Sequentia*, or *sequentes*.) The following, the next. (*Sequitur*.) It follows.

Ser. Series.

Serb. Serbian.

Serg., or Serj. Sergeant, or Serjeant.

Serg. Maj. Sergeant Major.

Serv., or Servt. Servant.

S. G. (*Salutis Gratia*.) For the sake of safety (i.e., insured.)

S. G. Solicitor General.

Sh., or s. Shilling.

Shak. Shakespeare.

S. Hist. Soc. Southern Historical Society.

S. H. S. (*Societatis Historicae Socius*.) Fellow of the Historical Society.

Si. Silicium.

Sing., or Sin. Sine, Singular.

S. Isl. Sandwich Islands.

Sist. Sister.

S. J. Society of Jesus.

S. J. C. Supreme Judicial Court.

Skr. Sanskrit.

S. L. Solicitor at Law.

S. L., or L. S. (*Sigilli Locus*.) Place for the Seal.

S. L., or S. Lat. South Latitude.

Slav. Slavonic, Slavonian.

Sld. Sailed.

S. M. Short Metre, Sergeant Major, Sons of Malta, Sewing machine.

S. M. (*Sa Majesté*.) His (or Her) Majesty.

Sm. C. Small capitals.

S. M. I. (*Sa Majesté Impériale*.) His (or Her) Imperial Majesty.

Smith. Inst. Smithsonian Institution.

S. M. Lond. Soc. (*Societatis Medicæ Londiniensis Socius*.) Member of the London Medical Society.

S. M. Lond. Soc. Cor. (*Societatis Medicæ Londiniensis Socius Cor.*) Corresponding Member of the London Medical Society.

Sn. (*Stannum*.) Tin.

Soc. Society.

Soc. Isl. Society Islands.

S. of Sol. Song (or Songs) of Solomon.

S. of T. Sons of Temperance.

ABBREVIATIONS.

- Sol. Solomon, Solution, Solicitor.
 Sol. Gen. Solicitor General.
 S. P. (*Sine Prole.*) Without issue, *supra* protest.
 S. P. (*Salutem precatur.*) He prays for his prosperity.
 Sp. Spain, Spanish.
 S. P. A. S. *Societatis Philosophicæ Americanæ Socius.*) Member of the American Philosophical Society.
 S. P. C. A. Society for the Prevention of Cruelty to Animals.
 S. P. C. K. Society for the Promotion of Christian Knowledge.
 S. P. D. (*Salutem plurimam dicit.*) He wishes much health, or sends his best respects.
 S. P. G. Society for the Propagation of the Gospel.
 Sp. gr. Specific gravity.
 S. P. Q. R. (*Senatus Populusque Romanus.*) The Senate and the People of Rome.
 Sq., or sqq. Square.
 Sq. (*Sequens.*) The following.
 Sq. ft. Square foot or Square feet.
 Sq. in. Square inch or inches.
 Sq. m. Square mile or miles.
 Sq. r. Square rod or rods.
 Sq. yd. Square yards.
 Sq. yds. Square yards.
 Sr. Sir or Senior, Sister.
 S. R. I. (*Sacrum Romanum Imperium.*) Holy Roman Empire.
 S. R. S. (*Societatis Regiæ Socius.*) Fellow of the Royal Society.
 S. S. Sabbath School, or Sunday School, Saint Simplicius (the mark on the collar of the Lord Chief Justice of England).
 SS. Saints.
 SS. (*Scitote.*) Know ye. (*Semis.*) Half.
 S. S. C. Solicitor before the Supreme Court.
 S. S. E. South-Southeast.
 S. S. W. South-Southwest.
 Σ. Τ. (*Σίγμα Ταύ.*) Sigma Tau (College Society).
 St. Stanza.
 St. Saint, Street, Strait.
 Stat. Statute, Statutes.
 S. T. D. (*Sacræ Theologiæ Doctor.*) Doctor of Sacred Theology, Doctor of Divinity.
 Ster., or Stg. Sterling.
 S. T. P. (*Sacræ Theologiæ Professor.*) Professor of Theology.
 Sts. Streets.
 Su. Sunday.
 Subj. Subjunctive.
 Subst. Substantive, Substitute.
 Suff. Suffix.
 Sun., or Sund. Sunday.
 Sup. Supplement, Superfine, Superior, Superlative.
 Sup., or Supr. (*Supra.*) Above.
 Sup. C. Superior Court.
 Super. Superior, Superfine.
 Superl. Superlative.
 Supp. Supplement.
 Supt. Superintendent.
 Surg. Surgeon, Surgery.
 Surg. Gen. Surgeon General.
 Surv. Surveyor, Surveying.
 Surv. Gen. Surveyor General.
 Sus. Susannah.
 S. V. (*Sub verbo, or Sub voce.*) Under the word or title.
 S. W. Southwest, Southwestern, Senior Warden.
 Sw. Swedish, Sweden.
 Switz. Switzerland.
 Syn. Synonym, Synonymous.
 Synop. Synopsis.
 Syr. Syria, Syrian, Syriac, Syrup.
 T, or τ. Ταύ (*Tau*). Greek T, t.
 T. Territory, Town, Township, Ton, or Tun.
 T. (*Tutti.*) All together, Tenor, Titus, Tullius, Tuesday.
 T., or Tom. Tome, Volume.
 Ta. Tantalum (Columbium).
 Tal. qual. (*Talis qualis.*) Just as they come, average quality.
 Tan. Tangent.
 Tart. Tartaric.
 Tb. Terblum.
 T. C. D. Trinity College, Dublin.
 Te. Tellurium.
 T. E. Topographical Engineers.
 Tel. Telegraph, Telegram.
 Ten., or Tenn. Tennessee.
 Ter. Territory.
 Term. Termination.
 Teut. Teutonic.
 Tex. Texas.
 Text. Rec. (*Textus Receptus.*) The Received Text.
 Θ, or θ. Θῆτα. (*Theta.*) Greek Th, th.
 Th. Thomas, Thorium.
 Th., or Thurs. Thursday.
 Theo. Theodore, Theodosia.
 Theol. Theology, Theological.
 Theoph. Theophilus.
 Theor. Theorem.
 Thess. Thessalonians.
 Thos. Thomas.
 Thu., Thur., or Thurs. Thursday.
 T. H. W. M. Trinity High Water Mark.
 Ti. Titanium.
 Tier. Tierce.
 Tim. Timothy.
 Tit. Titus, Title.
 Tl. Thallium.
 Tob. Tobit.
 Tom. Tome, or Volume.
 Tonn. Tonnage.
 Topog. Topography, or Topographical.
 Tr. Transpose, Translator, Translation, Treasurer, Trustee.
 tr. (*Trillo.*) A shake.
 Trans. Translator, Translation, Translated, Transaction, Transportation.
 Trav. Travels.
 Trav. Agt. Travelling Agent.

ABBREVIATIONS.

- Treas. Treasurer.
 Trin. Trinity.
 Trin. Coll. Trinity College.
 Trs., or Trus. Trustees.
 Ts. Texas.
 T. T. L. To take leave.
 Tu., or Tues. Tuesday.
 Turk. Turkey, or Turkish.
 Typ., or Typo. Typographer.
 Typog. Typography, Typographical.
 Y, or v. Υψίλον. (*Upsilon*.)
 Greek U, u, or y.
 U. Uranium.
 U. A. O. D. United Ancient Order of Druids.
 U. C. (*Urbis Condita*.) From the building of the city (Rome), Upper Canada.
 U. E. I. C. United East India Company.
 U. G. R. R. Underground Railroad.
 U. J. D. (*Utriusque Juris Doctor*.) Doctor of both laws (i.e., the Canon and the Civil Law). See J. U. D.
 U. K. United Kingdom.
 U. K. A. Ulster King at Arms.
 U. L. A. Union League of America.
 Ult. (*Ultimo*.) Last, or of the last month.
 Unit. Unitarian.
 Univ. University, Universally.
 Up. Upper.
 U. P. United Presbyterian.
 U. P. C. United Presbyterian Church.
 U. S. United States, United Service.
 U. S. (*ut supra*.) As above.
 U. S. A. United States Army, United States of America.
 U. S. Ex. United States Express.
 U. S. L. United States Legation.
 U. S. M. United States Mail.
 United States Marine, United States Mint (Philadelphia).
 U. S. M. A. United States Military Academy.
 U. S. M. C. C. United States Mint (Carson City).
 U. S. M. S. United States Mint (San Francisco).
 U. S. N. United States Navy.
 U. S. N. A. United States Naval Academy.
 U. S. P. United States Pharmacopoeia.
 U. S. R. Usher of the Scarlet Rod.
 U. S. S. United States Senate, United States Ship (or Steamer).
 Usu. Usual, or usually.
 U. S. V. United States Volunteers.
 U. T. Utah Territory.
 V. Vanadium, Victoria, Viscount.
 V. Five or fifth.
 V. Violin. VV. Violins.
 V. Verse, Verb, Village, Votive, volume. (*Versus*.) Against. (*Vide*.) See.
 V. a. Verb active.
 V. A. Vicar, or Vicariate, Apostolic, Vice Admiral.
 Va. Virginia.
 Vat. Vatican.
 V. aux. Verb auxiliary.
 Vb. n. Verbal noun.
 V. C. Vice Chancellor, Vice Chairman, Victoria Cross.
 V. C. G. Vice Consul General.
 V. def. Verb defective.
 V. dep. Verb deponent.
 V. D. L. Van Dieman's Land.
 V. D. M. (*Verbi Dei Minister*.) Minister of the Word of God.
 Ven. Venerable.
 Ven., or ven. fa. (*Venire facias*.) A writ to a sheriff to summon a jury.
 Ven. Ex. (*Venditioni exponas*.) A writ of execution to a sheriff to sell goods, etc.
 Ver. Verse, Verses.
 Ver. Vermont.
 Vet. Surg. Veterinary Surgeon.
 V. F. Vicar Forane.
 V. G. Vicar General, Vice Grand.
 V. g. (*Verbi gratia*.) For example.
 VI. (*Vide*.) See.
 V. i. Verb intransitive.
 VI. Six or sixth.
 VII. Seven or seventh.
 VIII. Eight or eighth.
 Vic. Ap. Vicar Apostolic.
 Vice Pres. Vice President.
 Vic. Gen. Vicar General.
 Vid. (*Vide*.) See.
 VII. Village.
 V. imp. Verb impersonal.
 V. irr. Verb irregular.
 Vis., or Visc. Viscount.
 Viz. (*Videlicet*.) Namely, to wit.
 V. n. Verb neuter.
 Vo. (*Verso*.) Left-hand page.
 Voc. Vocative.
 Vol. Volume.
 Vols. Volumes, Volunteers.
 V. P. Vice-President.
 V. R. (*Victoria Regina*.) Queen Victoria, Very Reverend.
 V. r. Verb reflexive, or reflexive.
 V. Rev. Very Reverend.
 Vs. (*Versus*.) Against, or in opposition.
 V. S. Veterinary Surgeon.
 Vt. Vermont.
 V. t. Verb transitive.
 Vul., or Vulg. Vulgate, Vulgar, or Vulgarly.
 Vv. ll. (*varias lectiones*.) Different readings.
 V. Y. Various years.
 W. Wednesday, Welsh.
 W. West, Western, Warden. (*Wolframium*.) Tungsten.
 W. Week.
 W. A. West Australia, West Africa.

ABBREVIATIONS.

W. & M. Coll. William and Mary's College.
 Wall. Wallachian.
 Wash. Washington.
 W. C. Water-closet, West Central.
 W. C. T. U. Women's Christian Temperance Union.
 Wed. Wednesday.
 West Res. Coll. Western Reserve College.
 Wes. Univ. Wesleyan University.
 w. f. Wrong font (in printing).
 W. G. C. Worthy Grand Chaplain, Worthy Grand Conductor.
 W. G. G. Worthy Grand Guide, Worthy Grand Guardians.
 W. G. H. Worthy Grand Herald.
 W. G. M. Worthy Grand Marshal.
 W. G. S. Worthy Grand Sentinel.
 Whf. Wharf.
 W. I. West Indies, West India.
 Wis., or Wisc. Wisconsin.
 Wisd. Wisdom (Book of).
 Wk. Week, Work.
 W. Lon. West longitude.
 Wm. William.
 W. M. Worshipful Master.
 W. M. S. Wesleyan Missionary Society.
 W. N. W. West-Northwest.
 W. P. Worthy Patriarch.
 Wpful. Worshipful.
 W. R. William (Rex) King, West Riding.
 W. S. Writer to the Signet.
 W. S. W. West-Southwest.
 W. T. Washington Territory.
 Wt. Weight.
 W. Va. West Virginia.
 Wyo. Ter. Wyoming Territory.
 Ζ, or ζ. Ζι. (Xi.) Greek. X, x.
 X. Christ. (Χριστος, *Christos*).
 X. Ten or tenth.
 X. St. Andrew's Cross, Exchange, His (or her) mark.
 XI. Eleven.
 XII. Twelve.
 XIII. Thirteen.
 XIV. Fourteen.
 XV. Fifteen.
 XVI. Sixteen.
 XVII. Seventeen.

XVIII. Eighteen.
 XIX. Nineteen.
 XX. Twenty.
 XXX. Thirty.
 XL. Forty.
 XC. Ninety.
 Xdr., or tdr. Crusader.
 Xmas., or Xm. Christmas.
 Xn., or Xtian. Christian.
 Xnty., or Xty. Christianity.
 Xt. Christ.
 Xtian. Christian.
 Xty. Christianity.
 Y. Yttrium.
 Y., or yr. Year.
 Y. B. Year-Book.
 Y. C. Yale College.
 Yd. Yard.
 Yds. Yards.
 Y*. The or Thee. NOTE.—The Y in this, and similar instances, is a substitute for th.
 Y*. Them.
 Y. M. C. A. Young Men's Christian Association.
 Y. M. Cath. A. Young Men's Catholic Association.
 Y*. Then.
 Y*. Their.
 Yr. Your.
 Yr. B. Year-Book.
 Yrs. Yours, Years.
 Y*. This.
 Y*. That.
 Y. W. C. A. Young Women's Christian Association.
 Y. W. C. T. U. Young Women's Christian Temperance Union.
 Y. W. C. U. Young Women's Christian Union.
 Ζ, or ζ. Ζῆτα. (Zeta.) Greek
 Ζ, z.
 Ζ. Zero.
 Ζ. Zinc.
 Ζ. Zone.
 Ζ. or Ζr. Zirconium.
 Zach. Zachary.
 Zeb. Zebulon, Zebedee.
 Zech. Zechariah.
 Zeph. Zephaniah.
 Ζ. G. Zoological Gardens.
 Ζn. Zinc.
 Ζod. Zodiac.
 Ζool. Zoölogy or zoölogical.
 Ζr. Zirconium.

II. CLASSICAL ABBREVIATIONS.—The following list contains a selection from the abbreviations that occur in the writings and inscriptions of the Romans :—

A. Absolvo, Ædilis, Æs, Ager, Ago, Alo, Amicus, Annus, Antiquo, Auctor, Auditor, Augustus, Aulus, Aurum, Aut.
 A. A. Æs alienum, Ante audita, Apud agrum, Aurum argentum.
 A. A. Augusti. AAA. Augusti tres.
 A. A. A. F. F. Auro argento sere fiando feriundo.
 A. A. V. Alter ambove.
 A. C. Acta causa, Alius civis.

A. D. Ante diem; e.g., A. D. V. Ante diem quintum.
 A. D. A. Ad dandos agros.
 ÆD. Ædes, Ædilis, Ædilitas.
 ÆM. and AİM. Æmilius, Æmilia.
 ÆR. Ærarium. ÆR. P. Ære publico.
 A. F. Actum fide, Auli filius.
 AG. Ager, Ago, Agrippa.
 A. G. Animo grato, Aulus Gellius.

ABBREVIATIONS.

A.L.E. and A.L.E. Arbitrium
litis *seemandæ*.
A.M. and A.MILL. Ad millia-
rium.
AN. Antensis, Annus, Ante.
ANN. Annales, Anni, Annona.
ANT. Ante, Antonius.
A.O. Alii omnes, Amico opti-
mo.
AP. Appius, Apud.
A.P. Ad pedes, *Ædilitia* potes-
tate.
A.P.F. Auro (or argento) pub-
lico feriendo.
A.P.M. Amico posuit monu-
mentum, Annorum plus minus.
A.P.R.C. Anno post Romam
conditam.
ARG. Argentum.
AR.V.V.D.D. Aram votam vo-
lens dedicavit, Arma votiva dono
dedit.
AT. A tergo. *Also* A TE. and
A TER.
A.T.M.D.O. Aio te mihi dare
oportere.
AV. Augur, Augustus, Aure-
lius.
A.V. Annos vixit.
A.V.C. Ab urbe condita.
AVG. Augur, Augustus.
AVGG. Augusti (*generally of*
two). AVGGG. Augusti tres.
AVT.PR.R. Auctoritas provin-
ciæ Romanorum.
B. Balbius, Balbus, Beatus,
Bene, Beneficiarius, Beneficium,
Bonus, Brutus, Bustum.
B. for V. Berna, Bivus, Bixit.
B.A. Bixit annos, Bonis augu-
riis, Bonus amabilis.
BB. or B.B. Bene, bene, *i.e.*,
optime, Optimus.
B.D. Bonæ deæ, Bonum da-
tum.
B.DD. Bonis deabus.
B.D.S.M. Bene de se merenti.
B.F. Bona femina, Bona fides,
Bona fortuna, Bonum factum.
B.J. Bona femina, Bona filia.
B.H. Bona hereditaria, Bonu-
rum heres.
B.I. Bonum iudicium. **B.I.I.**
Boni iudicis iudicium.
B.M. Beatæ memoriæ, Bene
merenti.
B.N. Bona nostra, Bonum no-
men.
BN.H.I. Bona hic invenies.
B.P. Bona paterna, Bonorum
potestas, Bonum publicum.
B.Q. Bene quiescat, Bona quæ-
sita.
B.RP.N. Bono reipublicæ na-
tus.
BRT. Britannicus.
B.T. Bonorum tutor, Brevi
tempore.
B.V. Bene vale, Bene vixit,
Bonus vir.
B.V.V. Balnea vina Venus.
BX. Bixit, *for* vixit.
C. Cæsar, Caius, Caput, Causa,
Censor, Civis, Cohors, Colonia,

Comitialis (dies), Condemno, Con-
sul, Cum, Curo, Custos.
C. Caia, Centuria, Cum, *the*
prefix Con.
C.B. Civis bonus, Commune
bonum, Conjugi beneemerenti, Cui
bono.
C.C. Calumnix causa, Causa
cognita, Conjugi carissimæ, Con-
sillium cepit, Curix consulto.
C.C.C. Calumnix cavendæ
causæ.
C.C.F. Cæsar (or Caius) cura-
vit faciendum, Caius Cail filius.
CC.VV. Clarissimi viri.
C.D. Cæsaris decreto, Caius
Decius, Comitilibus diebus.
CES. Censor, Censores. **CESS.**
Censores.
C.F. Causa fiduciæ, Conjugi
fecit, Curavit faciendum.
C.H. Custos heredum, Custos
hortorum.
C.I. Caius Julius, Consul jus-
sit, Curavit iudex.
CL. Clarissimus, Claudius, Clo-
dius, Colonia.
CL.V. Clarissimus vir, Clype-
um vovit.
C.M. Caius Marius, Causa mor-
tis.
CN. Cnæus.
COH. Coheres, Cohors.
COL. Collega, Collegium, Co-
lonia, Columna.
COLL. Collega, Coloni, Colo-
niæ.
COM. Comes, Comitium, Com-
paratum.
CON. Conjux, Consensus, Con-
siliarius, Consul, Consularis.
COR. Cornelia (tribus), Cor-
nellius, Corona, Corpus.
COS. Consiliarius, Consul, Con-
sulares. **COSS.** Consules.
C.P. Carissimus or Clarissimus
puer, Civis publicus, Curavit pon-
endum.
C.R. Caius Rufus, Civis Ro-
manus, Curavit reficiendum.
CS. Cæsar, Communis, Consul.
C.V. Claeissimus or Consularis
vir.
CVR. Cura, Curator, Curavit,
Curia.
D. Dat, Dedit, etc., De, Deci-
mus, Decius, Decretum, Decurio,
Deus, Dicit, etc., Dies, Divus, Do-
minus, Domus, Donum.
D.C. Decurio coloniæ, Diebus
comitilibus, Divus Cæsar.
D.D. Dea Dia, Decurionum de-
creto, Dedicavit, Deo dedit, Dono
dedit.
D.D.D. Datum decreto decuri-
onum, Dono dedit dedicavit.
D.E.R. De ea re.
DES. Designatus.
D.I. Dedit imperator, Diis im-
mortalibus, Diis inferis.
D.I.M. Deo invicto Mithræ, Diis
inferis Manibus.
D.M. Deo Magno, Dignus Me-
moriam, Diis Manibus, Dolo Malo.

ABBREVIATIONS.

D.O.M. Deo Optimo Maximo.
D.P.S. Dedit proprio sumptu,
Deo perpetuo sacrum, De pecunia
sua.
E. Ejus, Eques, Erexit, Ergo,
Est, Et, Etiam, Ex.
EG. Ager, Egit, Egregius.
E.M. Egregiæ memoriæ, Ejus-
modi, Erexit monumentum.
EQ.M. Equitum magister.
E.R.A. Ea res agitur.
F. Fabius, Facere, Fecit, etc.,
Familia, Fastus (dies), Felix, Fem-
ina, Fides, Filius, Flamen, For-
tuna, Frater, Fuit, Functus.
F.C. Faciendum curavit, Fidei
commissum, Fiduciæ causa.
F.D. Fidem dedit, Flamen
Dialis, Fraude donavit.
F.F.F. Ferro flamma fame,
Fortior fortuna fato.
FL. Filius, Flamen, Flaminus,
Flavius.
F.L. Favete, linguis, Fecit li-
bens, Felix liber.
FR. Forum Fronte, Frumen-
tarius.
F.R. Forum Romanum.
G. Gaius (=Caius), Gallia,
Gaudium, Gellius, Gemina, Gens,
Gesta, Gratia.
G.F. Gemina fidelis (*applied*
to a legion). So G.P.F. Gemina
pia fidelis.
GL. Gloria.
GN. Genius, Gens, Genus,
Gnæus (=Cnæus).
G.P.R. Genio populi Romani.
H. Habet, Heres, Hic, Homo,
Honor, Hora.
HER. Heres. Herennius. HER.
and HERC. Hercules.
H.L. Hac lege, Hoc loco, Ho-
nesto loco.
H.M. Hoc monumentum, Ho-
nesta mulier, Hora mala.
H.S.E. Hic sepultus est, Hic
situs est.
H.V. Hæc urbs, Hic vivit,
Honeste vixit, Honestus vir.
I. Immortalis, Imperator, In,
Infra, Inter, Invictus, Ipse, Isis,
Judex, Julius, Junius, Jupiter,
Justus.
IA. Jam, Intra.
I.C. Julius Cæsar, Juris Con-
sultum, Jus civile.
ID. Idem, Idus, Interdum.
I.D. Inferis diis, Jovi dedica-
tum, Jus dicendum, Jussu Dei.
I.D.M. Jovi deo magno.
I.F. In foro, In fronte.
I.H. Jacet hic, In honestatem,
Justus homo.
IM. Imago, Immortalis, Im-
munis, Impensa.
IMP. Imperator, Imperium.
I.O.M. Jovi optimo maximo.
I.P. In publico, Intra provin-
ciam, Justa persona.
I.S.V.P. Impensa sua vivus
posuit.
K. Kæso, Cai, Calumnia,
Caput, Carus, Castra.

K., KAL., and KL. Kalendæ.
L. Lælius, Legio, Lex, Libens,
Liber, Libra, Locus, Lollius,
Lucius, Ludus.
LB. Libens, Liber, Libertus.
L.D.D.D. Locus datus decreto
decurionum.
LEG. Legatus Legio.
LIB. Liber, Liberalitas, Liber-
tas, Libertus, Librarius.
LL. Leges, Libentissime,
Liberti.
L.M. Libens merito, Locus
monumenti.
L.S. Laribus sacrum, Libens
solvit, Locus sacer.
LVD. Ludus.
LV.P.F. Ludos publicos fecit.
M. Magister, Magistratus,
Magnus, Manes, Marcus, Marius,
Marti, Mater, Memoria, Mensis,
Miles, Monumentum, Mortuus,
Mucius, Muller.
M'. Manius.
M.D. Magno Deo, Manibus
diis, Matri deum, Merenti dedit.
MES, Mensis. MESS, Menses.
M.F. Mala fides, Marci filius,
Monumentum fecit.
M.I. Matri Idææ, Matri Isidi,
Maximo Jovi.
MNT. and MON. Moneta.
M.P. Male positus, Monumen-
tum posuit.
M.S. Manibus sacrum, Memo-
riæ sacrum, Manuscriptum.
MVN. Municeps, or municipi-
um; so also MN., MV., and
MVNIC.
M.V.S. Marti ultori sacrum,
Merito votum solvit.
N. Natio, Natus, Nefastus
(dies), Nepos, Neptunus, Nero,
Nomen, Non, Nonæ, Noster,
Novus, Numen, Numerius, Num-
erus, Nummus.
NEP. Nepos, Neptunus.
N.F.C. Nostræ fidei commis-
sum.
N.L. Non licet, Non liquet,
Non longe.
N.M.V. Nobilis memoriæ vir.
NN. Nostri. NN., NNO., and
NNR. Nostrorum.
NOB. Nobilis. NOB., NOBR.,
and NOV. Novembrius.
N.P. Nefastus primo (*i.e.*,
priore parte diei), Non potest.
O. Ob, Officium, Omnis, Opor-
tet, Optimus, Opus, Ossa.
OB. Obiit, Obiter, Orbis.
O.C.S. Ob cives servatos.
O.H.F. Omnibus honoribus
functus.
O.H.S.S. Ossa hic sita sunt.
OR. Hora. Ordo, Ornamentum.
O.T.B.Q. Ossa tua bene quies-
cant.
P. Pars, Passus, Pater, Pa-
tronus, Pax, Perpetuus, Pes, Pius,
Plebs, Pondo, Populus, Post,
Posuit, Præses, Prætor, Primus,
Pro. Provincia, Publicus, Publius,
Puer.

ABBREVIATIONS.

P.C. Pactum conventum, Patres conscripti, Pecunia constituta, Ponendum curavit, Post consulatum, Potestate censoria.

P.F. Pia fides, Publii filius, Promissa fides, Publici filius.

P.M. Pie memoriæ, Plus minus, Pontifex maximus.

P.P. Pater patratus, Pater patriæ, Pecunia publica, Præpositus, Præmipilus, Prætor.

PR. Præses, Prætor, Pridie, Princeps.

P.R. Permissu reipublicæ, Populus Romanus.

P.R.C. Post Romam conditam.

PR.PR. Præfectus prætorii, Prætor.

P.S. Pecunia sua, Plebiscitum, Proprio sumptu, Publicæ saluti.

P.V. Pia victrix, Præfectus urbi, Præstantissimus vir.

Q. Quæstor, Quando, Quantus, Que, Qui, Quinquennalis, Quintus, Quirites.

Q.D.R. Qua de re.

Q.I.S.S. Quæ infra scripta sunt; so **Q.S.S.S.** Quæ supra, etc.

QQ. Quæcumque, Quinquennalis, Quoque.

Q.R. Quæstor reipublicæ.

R. Recte, Res, Respublica, Retro, Rex, Ripa, Roma, Romanus, Rufus, Rursus.

R.C. Romana civitas, Romanus civis.

RESP. and RP. Respublica.

RET. P. and RP. Retro pedes.

S. Sacrum, Scriptus, Semis, Senatus, Sepultus, Servius, Servus, Sextus, Sibi, Sine, Situs, Solus, Solvit, Sub, Suus.

SAC. Sacerdos, Sacrificium, Sacrum.

S.C. Senatus consultum.

S.D. Sacrum diis, Salutem dicit, Senatus decreto, Sententiam dedit.

S.D.M. Sacrum diis Manibus, Sine dolo malo.

SER. Servius, Servus.

S.E.T.L. Sit ei terra levis.

SN. Senatus, Sententia, Sine.

S.P. Sacerdos perpetuus, Sine pecunia, Sua pecunia.

S.P.Q.R. Senatus populusque Romanus.

S.S. Sanctissimus senatus, Supra scriptum.

S.V.B.E.E.Q.V. Si vales bene est, ego quidem valeo.

T. Terminus, Testamentum, Titus, Tribunus, Tu, Turma, Tutor.

TB, TI., and TIB. Tiberius.

TB., TR., and TRB. Tribunus.

T.F. Testamentum fecit, Titi filius, Titulum fecit, Titus, Flavius.

TM. Terminus, Testamentum, Thermæ.

T.P. Terminum posuit, Tribunia potestate, Tribunus plebis.

TVL. Tullius, Tullus.

V. Urbs, Usus, Uxor, Vale, Verba, Vestalis, Vester, Vir, Vivus, Vixit, Volo, Votum.

V.A. Veterano assignatus, Vixit annos.

V.C. Vale conjux, Vir clarissimus, Vir consularis.

V.E. Verum etiam, Vir egregius, Visum est.

V.F. Usus fructus, Verba fecit, Vivus fecit.

V.P. Urbis præfectus, Vir perfectissimus, Vivus posuit.

V.R. Urbs Roma, Uti rogas, Votum reddidit.

III. MEDIEVAL ABBREVIATIONS.—Of the different kinds of abbreviations in use in the middle ages, the following are examples:—

A.M. Ave Maria.

B.P. Beatus Paulus, Beatus Petrus.

C.C. Carissimus (*also plur.* Carissimi), Clarissimus, Circum.

D. Deus, Dominicus, Dux.

D.N.PP. Dominus noster Papa.

FF. Felicissimus, Fratres, Pandectæ (*prob. for Gr. II.*).

I.C., or I.X. Jesus Christus.

I.D.N. In Dei nomine.

KK. Karissimus (*or -mi*).

MM. Magistri, Martyres, Matrimonium, Merritissimus.

O.S.B. Ordinis Sancti Benedicti.

PP. Papa, Patres, Piissimus.

R.F. Rex Francorum.

R.P.D. Reverendissimus Pater Dominus.

S.C.M. Sacra Cæsarea Majestas.

S.M.E. Sancta Mater Ecclesia.

S.M.M. Sancta Mater Maria.

S.R.I. Sanctum Romanum Imperium.

S.V. Sanctitas Vestra, Sancto Virgo.

V. Venerabilis, Venerandus.

V.R.P. Vestra Reverendissima Paternitas.

Besides the generally current abbreviations given above, other short methods of statement are frequently employed in particular circumstances. In the present work, for instance, in which the saving of space is of great moment, when the title or heading of a subject recurs in the body of the article,

A, B, C—ABD-EL-KADER.

it is generally—especially if a proper name—represented by its initial letter: e.g., A. for Abd-el-Kader. Two dates thus (1215–1250), following the name of a king, a pope, etc., indicate briefly the beginning and end of his reign or term of office; or thus (b. 1215—d. 1250), the dates of his birth and death. The meaning of these and similar contractions is in general sufficiently obvious from the connection in which they stand. See CONTRACTIONS.

A, B, C, *ā*, *bē*, *sē* [first three letters of the English alphabet], an alphabet; an elementary reading-book.

ABD, *abd*, signifies in Arabic 'slave' or 'servant,' and enters, with the name of God, into the composition of many proper names; as, Abd-Allah, 'servant of God;' Abd-el-Kader, 'servant of the mighty God;' Abd-ul-Latif, 'servant of the gracious God,' etc. So *Ebed* in Hebrew and Syriac.

ABD-EL-KADER, *abd' el-kā'der*, properly EL-HADJI-ABD-EL-KADER-ULID-MAHIDDIN: 1807–83; b. Ghetna, d. Damascus: third son of a Marabout chief of the race of Haschem, who trace their pedigree to the caliphs of the lineage of Fatima. He was born at an institution of the Marabouts, near Mascara, which belonged to his family. His father, esteemed a very holy man, d. 1834. In 1827, A. visited Egypt, where, in Cairo and Alexandria, he first came in contact with western civilization. Religious enthusiasm and melancholy were prominent in his character. He early showed an uncommonly gifted mind. A. was free from the savage cruelty and sensuality of the Arabs; he maintained purity of manners, and did not permit himself to be misled by anger or passion. Although he firmly adhered to the faith of his nation, and even used their fanaticism, he had no sympathy with their fanatical intolerance. When Algiers was conquered by the French, the Arabian tribes of the province of Oran seized the opportunity to make themselves independent of the Turks, and elected A. as their emir, who soon established his authority over some neighboring tribes. He then attacked the French; and by bloody battles, Dec. 3, 1833, and Jan. 6, 1834, he forced from them a treaty. In the interior his power was spread by victories over neighboring chiefs, and he became master of Miliana and Medeah. All the cities and tribes of the provinces of Oran and Titèri acknowledged A. as their sultan; the distant tribes sent him ambassadors with presents. Soon hostilities broke out between him and the French. The first operations of the French General Tretzel led to that fatal retreat, in which the French army was attacked at Makta, 1835, June 28, by A.'s whole force, nearly 20,000 cavalry, and suffered a disgraceful defeat.

After a struggle of six years, A. took refuge in Marocco, thus drawing upon Marocco the arms of France. After the decisive battle of Isly, 1844, the sultan gave up A.'s cause, but soon found A. at least his equal in power. and that he could not even prevent him from attacking the French again, 1845, Oct., and 1847, March. But he was defeated in a bold night-attack on the Moorish camp, Dec. 11, and was compelled to flee. He might easily have secured his own safety,

ABD-EL-WAHAB—ABDICATE.

but he would not abandon his attached followers, men, women, and children, to the plunder and massacre of the Maroccans. After a heroic combat on Dec. 21, he effected their retreat across the Muluia into the territory of Algeria, where they mostly surrendered to the French. A., with a few horsemen, resolved to fight his way through to the south; but failed; and surrendered, 1847, Dec. 22, to General Lamoricière and the Duc d'Aumale, on condition that he should be permitted to withdraw either to Egypt or to St. Jean d'Acre. The French government refused to ratify this agreement. A. was sent with his family to Toulon, whence he was removed in 1848 to Pau, and finally to the Château d'Amboise. Liberated in 1852 by Louis Napoleon, he lived at Brussa, in Asia Minor, till its destruction by an earthquake in 1855. He then, for a time, lived in Constantinople, but finally made his home in Damascus. He was of great service to humanity during the Syrian massacres of 1860. In 1865, he visited Paris and England, and was at the Paris Exhibition in 1867. In 1870, he offered to fight against the Germans. He wrote a religious work, translated, 1858, under the title *Rappel à l'Intelligent : Avis à l'Indifférent*.

ABD-EL-WAHAB: see WAHABIS.

ABDERA, n. *āb-dē-rā* [Gr. *Abdērītēs*; L. *Abdērītā*, an inhabitant of *Abdēra*], a town of ancient Thrace whose inhabitants were noted for their stupidity: ABDERITE, n. *āb'dēr-īt*, an inhabitant of Abdera; a stupid person: AB DER'ITAN, a. *-i-tān*, stupid; very foolish: N. a stupid person.

ABDICATE, v. *ab'dī-kāt* [L. *abdicātus*, rejected, renounced—from *ab*, *dīco*, I proclaim or make known], to proclaim one's own surrender of a thing or office; to give up a right; to formally renounce an office of dignity: AB'DICA'TING, imp.: AB'DICA'TED, pp.: ABDICATION, n. *āb'dī-kā'shūn*, the act of giving up; a surrendering; a demission: AB'DICANT, n. *-kānt*, also ABDICA'TOR, n. *-kā'ter*, one who: ABDICATIVE, a. *āb'dī-kā'tiv*, causing or implying abdication.—SYN. of 'abdicate': to abandon; renounce; resign; forsake; give up; vacate; quit; desert; demit.

ABDICATION.

ABDICATION : the act of giving up an office, generally the office of ruler or sovereign. Usually the result of vexation and disappointment. It was perhaps voluntarily, and from being wearied with dominion, that Diocletian, and with him Maximian, abdicated, 305. Christina of Sweden retired from the throne, 1654, out of preference for the freedom of private life, but wished still to exercise the rights of a sovereign. Charles V. laid down the crown, 1556, because his great schemes had failed. Philip V. of Spain did so, 1724, in a fit of melancholy, but resumed it on the death of his son. Amadeus of Savoy abdicated, 1494, to become a priest. Victor Amadeus of Sardinia, who abdicated, 1730, wished to recall the step, but was not allowed. Louis Bonaparte resigned the crown of Holland, because he would not consent to treat that country as a province of France. Charles Emanuel of Sardinia retired from the throne, 1802, not finding himself equal to the crisis; and the same was the case with Victor Emanuel, 1819. William I. of the Netherlands resigned, 1840, as his policy had become impossible from the turn of affairs in Belgium. Foreign force compelled the abdication of Augustus of Poland, 1707, and, later, that of Stanislaus Leszczyński, 1735, and of Poniatowski, 1795; as well as that of Charles IV. of Spain 1808, and of Napoleon, 1814 and 1815. Insurrections have been the most frequent cause of A. The early history of the Scandinavian kingdoms abounds in instances. In England, the compulsory abdication of Richard II., 1399, is an early example. In the case of James II., it was disputed whether the king had 'abdicated' or 'deserted.' More recent times saw Charles X., 1830, and Louis-Philippe, 1848, retire before the storm of revolution, without the conditions they made being regarded. The A. of Ferdinand of Austria, 1848, was an indirect consequence of the events of the year of revolutions; that of Charles Albert of Sardinia, 1849, of the battle of Novara. Of several cases among German princes, the chief is that of Ludwig of Bavaria, 1848. A late instance is that of Amadeus, king of Spain, who felt himself obliged to give up his crown, 1873, Feb. 11.

In some countries, the king can abdicate whenever he pleases; but in England, since the constitutional relation between the crown and the nation is of the nature of a contract, the king or queen, it is considered, cannot abdicate without the consent of parliament. It is, however, said that the king does abdicate, or, to speak perhaps more correctly, an A. may be presumed, and acted on by the people, if his conduct politically and overtly is inconsistent with, and subversive of, the system of constitutional government, of which the qualified monarchy of his office forms part.

At the conference between the two houses of parliament previous to the passing of the statute which settled the crown on William III., the word 'abdicated' with reference to King James II. seems to have been used advisedly instead of 'deserted'—the meaning, it is presumed, being that King James had not only deserted his office, but that by his acts, of which the said desertion formed part, he had, in view of

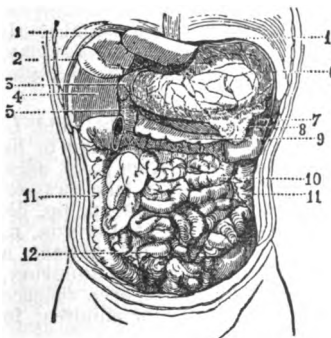
ABDIEL—ABDOMEN.

the constitution, ceased to have right to the throne. From this it may be inferred that A. was considered to have a twofold political signification, involving maladministration as well as desertion. The Scotch Convention, however, more vigorously and distinctly resolved that King James 'had forefaulted [forfeited] the crown, and the throne was become vacant.'

ABDIEL, n. *ăb'dî-ĕl* [Heb. servant of God]: a good and faithful angel; one of the seraphim, who alone boldly withstood Satan when he attempted to stir up the subordinate angels to revolt. See Milton.

ABDOMEN, n. *ăb-dō'mĕn* [L. *abdōmĕn*, the lower belly; *abdōmĭnis*, of the lower belly—from *abdo*, I conceal]: the lower part of the belly, containing the stomach and other viscera; the hinder part of the body in arthropoda. **ABDOMINAL**, a. *ăb-dōm'ĭ-năl*, belonging to the lower belly. **ABDOMINOUS**, a. *ăb-dōm'ĭ-nūs*, having a large belly. **ABDOMINALES**, n. plu. *ăb-dōm'ĭ-nā'lēz*, in zool., the soft-finned fishes which have their ventral fins placed on the abdomen, behind the pectorals.—**SYN.** of 'abdomen': belly; paunch; stomach.

ABDOMEN, *ăb-dō'mĕn*: A part of the human body. The trunk of the human body is divided by the diaphragm into two cavities—the upper being the thorax or chest, and the under, the abdomen or belly.



Organs of the Abdomen.

1. Diaphragm. 2. Gall-Bladder. 3. Pyloric end of Stomach. 4. Right Lobe of Liver. 5. Duodenum. 6. Great end of Stomach. 7. Spleen. 8. Piece of Caul, or Omentum. 9. Pancreas (Sweetbread). 10. Small Intestine (Jejunum). 11. Great Intestine (Colon). 12. Small Intestine (Illum).

Both the cavity and the viscera it contains are included in the term A. It contains the liver, pancreas, spleen, and kidneys, also the stomach, small intestine, and the colon. The lower bowel, the bladder, and internal organs of generation lie in the lowest part of the cavity, called the pelvis. The A. is lined by a serous membrane, the peritoneum, which is folded over the viscera, allowing them a certain freedom of motion, but keeping them in their proper relations to each other. The A. is divided externally by two horizontal lines into three principal regions—the upper or epigastric, the middle or umbilical, and the lower or hypogastric. These are again subdivided by two vertical lines—the side-divisions being called the hypochondriac, lumbar, and iliac regions respectively; the names epigastric and umbilical are then applied in a restricted sense to the middle divisions of the two upper principal regions; while the middle division of the lower is

ABDOMINALES—ABDUCENT.

called the region of the pubis. Diseases of the abdominal viscera are frequent, and chiefly consist either of chronic disorders of the digestive organs, or of derangements of the nerve-plexuses and ganglia there situated. These disorders announce themselves partly in bodily pain, and partly in mental affections, such as hypochondria and hysterics.

ABDOMEN, in Entomology, the last of the three parts into which the body of an insect is divided. It is composed of a number of rings or segments, frequently nine, more or less distinct from each other. It contains a portion of the intestines and the sexual organs. In the perfect insect, its segments bear no legs nor wings; but the hind-legs of larvæ or caterpillars, which afterwards disappear, are attached to them. In many insects, its last segments bear appendages of various uses and forms, as pincers, stings, borers or ovipositors, etc.

ABDOMINALES, *ăb-dôm'î-nā'lēz*, or ABDOMINAL FISHES: in the Linnæan arrangement, an order of Fishes including all the Osseous Fishes of which the ventral fins are placed upon and beneath the abdomen, and so behind the pectoral fins. Subsequent naturalists have thought it right in classifying Fishes to give a higher place to other characters; and in the system of Cuvier, the name A. is given to an order of much more limited extent, a subdivision of the *Malacopterygii* or Soft-rayed Osseous Fishes, distinguished by having the ventral fins placed beneath the abdomen and not attached to the bones of the shoulder. It includes the *Cyprinidæ* (Carp, Minnow, etc.), *Esocidæ* (Pike, etc.), *Siluridæ*, *Salmonidæ* (Trout, Salmon, etc.), and *Clupeidæ* (Herring, etc.).

ABDUCE, v. *ăb-dūs'*, also ABDUCT, v. *ăb-dŭkt'* [mid. L. *abducĕrĕ*, to eject from possession by forms of law or by force; *abductus*, ejected from possession—from L. *ab*, *dūco*, I lead]: to lead or draw from; to separate; to take away secretly and forcibly. ABDUC'ING, imp. ABDUCED, pp. *ăb-dŭst*. ABDUC'ING, imp. ABDUC'TED, pp. ABDUC'TOR, n. *-tĕr*, one who takes away secretly and forcibly; in *anat.*, a muscle that draws a limb or a part outwards. ABDUCTION, n. *ăb-dŭk'shŭn*, a carrying away by fraud or open violence—generally applied to persons, as females or children; in *med.*, a drawing away from.

ABDUCENT, a. *ăb-dŭ'sĕnt* [L. *abducens* or *abducen'tem*, leading or drawing away—from *ab*, *dūco*, I lead]: separating; drawing back. ABDUCENTES, n. plu. *ăb'dŭ-sĕn'tēz*, in *anat.*, the 6th pair of cranial nerves which supply those muscles by which the eyes are rotated outwards.

ABDUCTION.

ABDUCTION: the carrying away of any person by fraud or violence, a misdemeanor punishable by indictment—the civil remedies being by recaption, by writ of *habeas corpus*, and by an action for trespass. The statutes of the different states, while varying in regard to the manner of punishment, agree in the definition of this crime in its numerous forms. Thus it includes secret confinement, or imprisonment, without due process of law; also the forcible carrying or sending of persons out of the state; or the inveigling or kidnapping, with intent to confine, or imprison, such persons. Such offense may be tried either in the county in which it has been committed, or in that in or to which the person thus inveigled, kidnapped or imprisoned shall have been taken or confined. Consent on the part of the person thus treated shall not be a defense, unless it shall be made satisfactorily to appear to the jury that such consent was not obtained by fraud nor extorted by duress or threats.

Any person who shall fraudulently and deceitfully entice, or take away any unmarried woman 'of a chaste life and conversation' from her father's house, for improper purposes, and every person who aids and assists in such an abduction, is deemed by the statutes of most of the states to be guilty of a misdemeanor, for which the punishment is imprisonment at hard labor for from one to three years, or fine, either or both, at the discretion of the court. The taking any woman unlawfully, against her will, and, by force, menace, or duress, compelling her to marry any person, is punishable by imprisonment not less than ten years, and the same in case of the act only with intent to commit the crime. The taking away from her father, mother, or guardian, of a female child under the age of fourteen years, without their consent, either for the purpose of prostitution, concubinage, or marriage, is also defined as A., and is punishable by imprisonment for from one to three years, or by fine, or both. Still another form of A. is the malicious, forcible, or fraudulent leading, taking, or carrying away, or decoying or enticing away of any child under the age of twelve years with the intent to conceal and detain the said child from its parent, guardian, or other person having the lawful charge of said child; and this crime is punishable by imprisonment not exceeding ten years, or by fine, or by both. If the father or mother of any child under six years of age, or any other person to whom such a child is confided, abandons the child in the highway, or elsewhere, the act is covered by the same statutes that take cognizance of the crime of A., and the punishment therefor is prescribed by such statutes. In the instance of an unmarried female above the age of consent going with a man of her own volition and with her full consent, an indictment for A. will not lie. In case of the A. of a woman against her will, and of her after-marriage to the defendant with her full consent, it is held that her evidence against her abductor should be allowed, and that if she were a competent witness at any time after the commission of the crime, no subsequent assent to its commission can incapacitate her. If a woman be forcibly taken in one country, and afterwards goes voluntar-

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ily into another country and is there married or defiled with her own consent, the fact is not indictable in either country, the offense not being complete in either. Kidnapping is an offense at common law. It is considered to be the most aggravated kind of A., and is punishable by fine and imprisonment. In order to constitute the offense of kidnapping a child under ten years of age, it is not necessary that actual force and violence should be used, nor is a transportation to a foreign country necessary to the completion of the offense. At common law, the offense of kidnapping is treated as an aggravated form of false imprisonment, and all the ingredients in the definition of the latter are of course comprehended in the former. The requisites in an indictment seem to be, an averment of an assault, and the carrying away, or transporting the party injured, from his own country into another, unlawfully and against his will. It is not sufficient to charge the defendant with kidnapping, generally; the indictment should state specifically the facts and circumstances which constitute the offense. In A. and kidnapping, not only the misdoers themselves, but the procurers and those who wittingly receive the person so kidnapped or abducted for the purpose of concealment or imprisonment, are frequently made principals by statute.

ABD-UL-HAMID, *âb' dool-hâ'mid*, II., Sultan of Turkey: b. 1842, Aug. 6; was proclaimed sultan in succession to his brother, Murad V., who was deposed in consequence of mental incapacity 1876, Aug. 31. He succeeded, also, to a war with Servia and Montenegro then in progress; and when this was concluded by the proclamation of peace, 1877, March, Russia joined with Roumania in declaring war against Turkey, and invaded Roumelia. Then occurred the fine defense of Plevna and the repulse of the Russians, who were forced to retire to the Shipka pass. Here the Turks were held at bay until reinforcements arrived, when Plevna was captured, Dec. 9. The Turks retreated to Adrianople, and being also defeated at Kars, and driven into Erzeroum, were forced to submit to terms, and the treaty of San Stefano was signed, 1878, March 17. The situation, however, threatened a general war, until the Congress of Berlin, 1878, July 13, concluded peace. The reluctance of Abd-ul-Hamid to carry out the stipulations of the Congress of Berlin in good faith, has kept Europe more or less on the brink of general disorder ever since. In 1879 pressure had to be put upon him by the British government to reduce him to submission, since which time he has displayed wisdom and prudence in the conduct of his government and the regulation of his numerous 'entangling alliances.'

ABD-UL-LATIF, *âb' dool-lâ-tîf*: 1161-1231; b. and d. Bagdad: celebrated Arabian writer of multifarious acquirements. During his youth he underwent an amazing amount of mental drudgery, in accordance with the eastern fashion of his time, to fit himself for becoming a scholar. The ordeal consisted in his committing to memory a large number of standard works, such as the Koran, the novels of Hariri, and not a few grammatical treatises. To complete his cult-

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ure in the various branches of Mohammedan lore, he betook himself to Damascus, where the famous Saladin had gathered round him the most learned men of the time. Through the liberality of the sultan, and the kindness of the Vizir Fadhel, he was enabled to proceed to Egypt, where he delivered lectures while Saladin was fighting the Lion-heart at St. Jean d'Acre. Here he became intimate with Moses Maimonides, the great Jewish writer, and devoted himself chiefly to the study of medicine, although while at Cairo, he also wrote his excellent and accurate work on Egypt, translated into Latin by Professor White of Oxford, 1800, and into French by Baron de Sacy, 1810. He died at Bagdad on his way to Mecca.

ABD-UL-MEDJID-KHAN, *âbd'ool-mé-jéd'kawn* or *-kân*, the Grand Sultan, 31st sovereign of the race of Osman: 1823-61: succeeded his father, Mahmud II., 1839, July 1. The Turkish empire was then in great danger. The army had been defeated and dispersed by the Egyptians in the battle of Nisib, 1839, June 29, and there was nothing to hinder the victorious Ibrahim Pacha from advancing on Constantinople, where a large party were favorable to the Egyptian power. This party wished to make the viceroy of Egypt, Mehemet Ali, Chakan (the ancient title of the Grand Sultan) of both seas. Had it not been for the intervention of the Christian powers, the House of Osman was lost. The treaty of July, 1840, from which France kept aloof, rescued the young Padishah from sure destruction. Mehemet Ali submitted, 1840, Nov. 27; and the treaty of July, 1841, to which France subsequently adhered, settled the future dependent relation of Egypt to Turkey. The sultan, though not very energetic in body or mind, proceeded in the path of reform begun by Selim III. and Mahmud II. In this he had for his chief adviser Reshid Pacha, an intelligent and humane Mussulman, educated in France. The aim of all his measures was to place the Osman population on a footing with the civilized inhabitants of the west. A. wished the happiness of all his subjects, without respect of creed. A sort of proclamation of their rights was issued in the *hatti-shefir* of Nov., 1839. This was followed by numerous reforms in all departments; and in 1850, the professors of all religions were decreed equal in the eye of the law. That these decrees remained, in a great measure, a dead letter, is not attributable to the will of the sultan. The chivalrous part acted by A., 1850, in refusing, at the risk of losing his throne, to give up Kossuth and the other political refugees to the menaces of Russia and Austria, will make his name remembered in the annals of humanity.

The sovereigns of Turkey have long been in an anomalous position. The ambassadors of the great powers have ruled the divan; and the sultan was in special difficulty during the war with Russia, 1854-56, and the diplomatic negotiations consequent to it. On the death of A. his brother, Abdul-Aziz (b. 1830), succeeded him; but when Abdul-Aziz was deposed, 1876, May, A.'s eldest son, Mohammed Murad (b. 1840), became sultan for a few months,

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and then made way in August for the second son, Abdul-Hamid.

ABD-UR-RAHMAN, *âbd'êr-râh'mân*, Sultan of Fez and Morocco: b. 1778; was the rightful heir to the throne when his father died, 1794; but was superseded by an uncle, after whose death he ascended the throne, 1823. His first four years of rule were occupied in quelling insurrections. Next, some danger to the state of Morocco was threatened by the refusal of Austria to pay the tribute for safety against pirates; but the sultan wisely adjusted the dispute by relinquishing this sort of 'black-mail,' formerly levied by Morocco on European ships in the Mediterranean. The religious war under Abd-el-Kader against the French in Algeria involved A.; but was concluded by the battle of Isly, 1844, and the subsequent mediation of England. The piratical habits of his subjects brought A. to the brink of war with more than one European state. He was a zealous Mussulman, without the wild fanaticism common among his countrymen; as a ruler, he was strict, often cruel. He was succeeded, 1859, by his eldest son, Sidi-Mohammed (b. 1808, d. 1873).

ABEAR, v. *ă-bâr'* [AS. *abéran*—from *a*, on; *beran*, to bear (see BEAR 1)]: in *OE.*, to bear; to comport one's self. **ABEAR'ING**, imp. **ABEARED**, pp. *ă-bârd'*

A'BECKET, THOMAS : see BECKET.

ABED, ad. *ă-běd'* [AS.]: on or in bed.

ABEL, *ă'běl*: appears in the book of Genesis as the second son of Adam, and a shepherd. He was slain by his elder brother Cain, under the influence of jealousy, because the offering of the latter had been rejected by Jehovah, and that of the former accepted. It is not said in Genesis why Jehovah accepted the sacrifice of Abel; but the Saviour, in the New Testament, speaks of 'righteous Abel,' from which it is concluded that there dwelt in him a spirit of faith or trust in the unseen God, of which his brother was destitute. The writer of the Epistle to the Hebrews opens his enumeration of the 'faithful,' Heb. xi., with these words: 'By faith Abel offered unto God a more excellent sacrifice than Cain.' Such, also, has been in all ages the universal opinion of the Christian Church, which has regarded Abel as a type of innocence and faith.

ABEL, *ă'běl*, CHARLES FREDERICK: 1719-87; b. Koethen, Germany; distinguished musician. He was a pupil of Sebastian Bach, and for some years a member of the famous Dresden band of the Elector of Saxony, king of Poland. In 1758, when nearly forty years of age, he came to England in great destitution; but his talents were quickly recognized. He was appointed chamber-musician to the queen of George III. His peculiar instrument, the *viola da gamba*, a small violoncello, with six strings, was never played by any other in equal perfection. He also obtained reputation as a composer, though his pieces are not now held in very great estimation. His life was shortened by his intemperate habits.

ABELARD.

ABELARD, PETER, *ab'e-lard*, (Fr. *Abélard* or *Abailard*: Lat. *Abelardus*): 1079-1142; scholastic philosopher and theologian, the boldest thinker of the 12th c., born near Nantes, at Palet, a village which belonged to his parents. An irrepressible thirst for knowledge, and a special pleasure in scholastic logic, moved him to resign his rights of primogeniture in favor of his younger brothers. He left Bretagne for Paris, in order to hear the prelections of William of Champeaux, but soon incurred the hatred of his master, whom he puzzled by his wonderful subtlety. He fled to Melun, and afterwards to Corbeil, persecuted and admired wherever he went. He then returned home for the restoration of his health. With renewed strength he returned to Paris, reconciled himself with his opponents, and molded, by his influence as a lecturer, some of the most distinguished men of his age, among whom were the future Pope Celestine II., Peter Lombard; Berengar, his future apologist, and Arnold of Brescia. At this time, there lived in Paris Heloise, the niece of the Canon Fulbert, then seventeen years of age, and already remarkable for her beauty, talents, and knowledge. She soon kindled in the breast of A., then thirty-eight years old, a violent and overwhelming passion, which was returned by Heloise with no less fervor. By means of Fulbert, A. became teacher and companion of Heloise, and the lovers were happy together until A.'s ardent poetical effusions reached the ears of the canon. He sought to separate the lovers, but it was too late. They fled together to the country, where Heloise bore a son, and was privately married to A., with the consent of her uncle. Not long after, Heloise returned to Fulbert's house, and denied the marriage, that her love might be no hinderance to A.'s advancement in the church. Enraged at this, and at a second flight which she took with her lover, Fulbert, in order to make him canonically incapable of ecclesiastical preferment, caused A. to be emasculated. In deep humiliation A. entered as a monk the abbey of St. Denis, and induced Heloise to take the veil at Argenteuil. But the lectures which he began to give soon exposed him to new persecutions. The synod of Soissons, 1121, declared his opinions on the Trinity heretical. He left St. Denis, and built at Nogent-on-the-Seine a chapel and hermitage called Paraclete, which, after its enlargement by his scholars to a monastic foundation, he, on his appointment as abbot of St.-Gildas-de-Ruys, in Bretagne, gave over to Heloise and her sisterhood for a dwelling. His residence in St.-Gildas was embittered by a continued struggle against his love, and by the hatred of the monks, till at last, in 1140, his doctrine was condemned by Pope Innocent III., and he was ordered to be imprisoned. But Peter the Venerable, abbot of Clugny, after A. had retracted his opinions on the Trinity and Redemption, reconciled him to his enemies. A. died with the reputation of a model of monastic propriety, in the abbey of St. Marcel, not far from Chalons-on-the-Saône. Heloise had him interred at the Paraclete, hoping one day to lie by his side. She survived A. twenty years. The ashes of both were taken to Paris in 1808, and in 1828 were buried

ABELE—ABENDBERG.

in one sepulcher in Père la Chaise.—The doctrines advanced by A. in his controversy with St. Bernhard have a decidedly rationalist tendency; and he, and his predecessor Erigena, may be looked upon as the first avowed representatives of that school. A. laid down the principle that nothing is to be believed but what has been first understood; while the church held that we must believe in order to understand; and Bernhard was for banishing inquiry altogether from the province of religion. In judging of A.'s merits we are not to look so much to his writings as to the influence which his wonderful power of public disputation enabled him to exercise on his age. His character, no less than his doctrine, gave great offense. Until recently, it is chiefly the romantic history of his love that has occupied attention. The chief biographies are by Rémusat (Par. 1845), Wilkens (Gött. 1855), Deutsch (Leip. 1883), and Sauerland (Frankf. 1879). The Latin writings and letters of A. and Heloise were collected by Amboise, and published by Duchesne (Par. 1616). Some works of A. have been recently discovered; among others, *Sic et Non*, a collection of doctrinal contradictions from the Fathers. Cousin, who published the hitherto unedited works in 1836, has given us a complete edition of A.'s works (2 vols., Par. 1849-59).

ABELE, n. *ă-bě-lě* [Pol. *bialo*, white]: the white poplar-tree; the *Populus alba*, Ord. *Salicacææ*. See **POPLAR**.

ABELITES, *ă'běl-its*, a Christian sect of the 4th c., found chiefly in the neighborhood of Hippo, North Africa. Their chief distinction consisted in marrying, but abstaining from matrimonial intercourse, in order not to propagate original sin. They held that Abel so lived, because the Bible mentions no children of his.

ABELMOSCHUS: see **HIBISCUS**.

ABENCERRAGES, *ă-běn'se-rāj-ēs*, a noble Moorish race whose struggles with the family of the Zegrîs, and tragical destruction in the royal palace of the Alhambra, in Granada, in the time of Abu-Hassan (1466-84), the last but one of the kings of Granada, furnish the materials for a charming Spanish work of fiction, *Historia de las Guerras Civiles de Granada* (Madrid, 1694). From this Chateaubriand composed *Les Aventures du Dernier Abencerrage*, and furnished the text of an opera of Cherubini's. The work, however, seems to be destitute of historical foundation, at least Conde is silent on the subject in his *Historia de la Dominacion de los Arabes en España* (3 vols., Madrid, 1829).

ABENDBERG, *ă'bënd-bërg*: a hill in the canton of Berne, rising abruptly out of the waters of Lake Thun, on the south side. It is interesting as the site of an institution, established by Dr. Guggenbühl, for the cure of Cretinism (q. v.), and supported by contributions from far and near. The sanguine hopes raised as to the good to be effected by the healthiness of the situation, and the mode of treatment followed, have been greatly disappointed, little alleviation being perceptible. The establishment still exists as an asylum for Cretins.

ABEN-ESRA—ABERCROMBIE.

ABEN-ESRA, *â'bên-ês-râ*, properly **ABRAHAM · BEN-MEIR-BEN-ESRA**: 1093–1168; b. Spain, d. Rome: one of the most learned Jews of his time. He understood the Hebrew, Arabic, and Aramaic languages; had considerable knowledge of mathematics, astronomy, and medicine; was a scientific observer; and generally distinguished himself as a sagacious thinker. Having left his native land, he visited Lombardy, Provence, France, Egypt, and England, and passed the later years of his life in Rome; everywhere giving lectures on grammar, theology, astronomy, etc., besides writing and translating several works in Hebrew and Arabic. His *Commentaries on the Old Testament* are the most important of his works, which include some treatises on astrology, since published in Latin. The scholastic writers mention Aben-Esra as **ABENARE** or **AVENARD**.

ABEOKUTA, *âb-bê-o-kô-tû*: city, or rather collection of small towns or villages, cap. of the territory of Egba, in the Yoruba country, on the w. coast of Africa: about 80 m., by the river Ogun, n. of Lagos (on the Bight of Benin), and 240 m. w. of the Lower Niger. It is 567 ft. above the sea-level, on an undulating plain, fantastically broken by masses of gray granite, and covered with bush. A., whose area is 4 m. by 2 m., is surrounded by a wall of hardened mud, 18 to 20 m. in circumference, between 5 and 6 ft. high, without embrasure, with apertures here and there. The houses are square, and built of mud, with tall roofs of thatch; the streets are narrow and irregular, and the only scavengers are the sun, the vulture, and the pig. There are a few European traders and missionaries. There is a trade in palm-oil and grain. Pop. estimated at 150,000. See R. F. Burton's *Abeokuta and the Camaroons Mountains* (1863).

ABER, *âb'êr*, is a Celtic word which enters into the composition of several names of places, chiefly in Wales and Scotland. It indicates the mouth or embouchure of a stream, either into the sea, or into another river—as Aberbrothock, at the mouth of the Brothock, in Forfarshire; Abergavenny, at the junction of the Usk and Gavenny, in Wales.

ABERAVON, *ab-êr-â'vôn*, or **PORT TALBOT**: parliamentary and municipal borough on the s. coast of Wales, in Glamorganshire, near the mouth of the Avon, about 30 m. w. of Cardiff. It is beautifully situated near the valley of Cwm Avon, in which are extensive mining-works belonging to the Bank of England. The town has a good harbor and docks, is a station on the South Wales Railway, and communicates regularly with Bristol by steamers. The valley of the Avon is shut in by lofty hills, while every available space is occupied by copper and iron works. There is a stone bridge of one arch over the river. A. imports ore from Cornwall; and exports copper, tin, and coal. Pop. of municipal borough (1881), 4,875.

ABERBROTHWICK: see **ARBROATH**.

ABERCROMBIE, *âb'êr-krûm-bî*, **JOHN**, M.D.: 1780–1844; b. Aberdeen: in his own day the most eminent of Scottish physicians; son of a parish minister. He studied

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medicine in Edinburgh, where also he practiced his profession. After the death, 1821, of the celebrated Dr. Gregory, he became recognized as the first consulting physician in Scotland. His professional writings contributed to his celebrity. His works on *The Intellectual Powers* and *The Moral Feelings*, 1830, 1833, though without originality or depth of thought, gained repute from the high personal character of the author, and from their genuine religious feeling. Dr. A. received the degree of M.D. from Oxford, the rectorship of Marischal College, the vice-presidency of the Royal Society of Edinburgh, and the office of Physician in Ordinary to Her Majesty for Scotland.

ABERCROMBY, *äb'ër-krüm-bî*, SIR RALPH: 1734-99: b. Menstry, in Clackmannanshire. He studied for the Scottish bar, 1752 to 1755, at the universities of Edinburgh and Leipsic. His natural inclination, however, pointed to a military life; and in 1758, he went to Germany as a cornet in the 3d Dragoon Guards. In 1780, he raised a regiment in Ireland, which was called the 103d, or King's Irish. It was disbanded in 1783. In 1793, he accompanied the Duke of York to Holland. His conduct throughout that unfortunate campaign, especially during the disastrous retreat in the winter of 1794, 5, won him the love and admiration of the whole army. On his return to England, he was appointed to the chief command of the expedition to the West Indies, which, notwithstanding the vexatious obstruction of his designs, he conducted with distinguished success, taking Grenada, Demerara, Essequibo, St. Lucia, St. Vincent, and Trinidad. Soon afterwards he was appointed commander of the forces in Ireland; but his enlightened and manly remonstrances against the policy of government towards that country occasioned his removal to a similar command in Scotland. On his return from an expedition to Holland, he was appointed to command the expedition to the Mediterranean. The fleet anchored in Aboukir Bay on the 2d of March. On the 13th, the enemy were driven within the lines of Alexandria. On the morning of the 21st, in the glorious action that ensued on the enemy's attempt to surprise the British camp, the British commander was struck by a musket-ball in the thigh; but not till the battle was won, and he saw the enemy retreating, did he show any sign of pain. Then he was borne from the field. The ball could not be extracted; mortification ensued; and on the 28th he died. A. was at once gentle and brave, clear-sighted and cool, prompt and daring; he was also a man of liberal accomplishments. The peerage conferred on his widow was afterwards enjoyed by his eldest son, with the title of Baron Abercromby.

ABERDARE, *äb'ër-dür'*: town in the county of Glamorgan, about 4 m. s.w. of Merthyr-Tydvil. Coal and iron are abundant in the vicinity, coal being largely exported. A., which is connected with the coast both by rail and canal, is a flourishing centre of iron and tin works. The town has kept pace with the development of its industries; it has many substantial buildings, is well supplied with water, and pos-

ABERDEEN.

sesses a public park. Pop. (1841), 6,471; (1871), 37,744; (1881), 33,796.

ABERDEEN, *äb'ér-dên'*: the chief city and seaport in the n. of Scotland, is in the s.e. angle of the county, at the mouth of the river Dee, which forms its harbor, and 111 m. n. of Edinburgh. Its mean annual temperature is 45°.8 F., and rainfall, 30.57 inches. William the Lion made A. a royal burgh in 1179. The English burned A. in 1336, but it was soon rebuilt, and called New Aberdeen. Old A., within the same parliamentary boundary, is a small town a mile to the n., near the mouth of the Don. King's College and University, founded in Old A., 1494, and Marischal College and University, founded in New A., 1593, were, in 1860, united into one institution, the University of Aberdeen. It had about 800 students in 1884, 5; and its general council, with that of Glasgow University, sends one member to parliament. In the 17th c. A. had become an important place, but it suffered much from both parties in the civil wars. It has now a flourishing trade and large manufactures, and its handsome light-gray granite architecture is much admired. The harbor has been much enlarged and deepened, and a new breakwater has been lately built. The total registered shipping of the port in 1885 amounted to 105,341 tons. The chief exports are linens, woollens, cotton-yarns, paper, combs, granite (hewn and polished), cattle, grain, preserved provisions, and fish. A. has the largest comb and granite-polishing works in the kingdom. It has considerable iron-works and much shipbuilding. The A. clipper-bow ships are celebrated as fast sailers. A. has above 60 places of worship, and 10,000 children at school. Connected with A., which has always been a celebrated seat of learning, have been the names of Barbour and Boece; Bishops Elphinstone, Dunbar, and Forbes; the Earls Marischal; Jameson, Gregory, Reid, Beattie, Campbell, and Hamilton. The burgh is governed by 25 councilors, including a provost, six bailies, a dean of guild, etc. Pop., in 1871, of municipal burgh, 76,348; parliamentary burgh, 88,125. In 1881 the pop. of the parliamentary burgh was 105,003. Since 1885 A. sends two members to parliament. The value of real property, 1885, 6, was £492,946.

ABERDEEN, GEORGE HAMILTON GORDON, Earl of: 1784-1860; b. Edinburgh; educated at Harrow and at St. John's College, Cambridge, where he took his degree of M.A. in 1804. Before this, on succeeding to the earldom in 1801, he made a tour through Greece, the record of which is preserved in Byron's well-known line—

'The travelled thane, Athenian Aberdeen.'

In his twenty-second year he was elected one of the sixteen Scottish representative peers, and entered public life as a Tory. In 1813, he was appointed ambassador to the Austrian court, and conducted the negotiations which terminated in the alliance of that power with Britain. At this time he formed that close friendship with Prince Metternich which so decidedly influenced his subsequent policy as a statesman. On the conclusion of the war he was elevated to the

. ABERDEENSHIRE.

British peerage as Viscount Gordon. In 1828, he took office in the new ministry under the Duke of Wellington. The general principle of his policy, as Secretary of State for Foreign Affairs, was that of non-interference in the internal affairs of foreign states, which, joined to his well-known sympathy with such statesmen as Metternich, has exposed him—not always justly—to the suspicion of being inimical to the cause of popular liberty. His gradual abandonment of high Tory principles was evinced by his support of the bill for the repeal of the Test and Corporation Acts, and of the Roman Catholic Emancipation Act. From the fall of the Wellington ministry till the Peel administration in 1841, A. was out of office, with the exception of his brief administration of the Colonial Office in the Tory ministry of 1834, 5. In 1841, he again received the seals of the Foreign Office. M. Guizot was at that time foreign minister in France, and the two statesmen acted in cordial alliance. The conclusion of the Chinese War, the Ashburton Treaty, and the Oregon Treaty, were the principal services rendered to the country during his administration of foreign affairs. From the time that the repeal of the Corn Laws became the rallying-point of the Peel party he was in accord with their policy. In 1846, he resigned with Sir Robert Peel. In 1853, on the resignation of Lord Derby, the extraordinary state of parties necessitated a coalition, and A. was selected as the fittest man to head the new ministry, which for some time was extremely popular. The feeble and vacillating policy in the conduct of the war with Russia gradually undermined its stability, and the disastrous mismanagement brought to light in the winter of 1854, in all departments of the public business connected with the war, filled up the measure of the popular discontent. In 1855, Feb. 1, A. resigned office. He was author of an essay on Grecian Architecture, 1822.

ABERDEENSHIRE, *-shēr*: a large maritime county in the e. of Scotland, between, 56° 52' and 57° 42' n. lat., and 1° 49' and 3° 48' w. long.; bounded n. by Banffshire and the North Sea; e. by the North Sea; s. by Kincardine, Forfar, and Perth shires; w. by Inverness and Banff shires. It is the fifth in size of the Scottish counties; greatest length, 102 m.; greatest breadth, 50 m.; with 60 m. of sea-coast, and an area of 1,970 sq. m. It has long been popularly divided into five districts (proceeding from s.w. to n.e.)—Mar, Strathbogie, Garioch, Formartin, and Buchan. A. is generally hilly, and in the s.w. (Braemar) entirely mountainous, the Grampians running along the s. side, and branching off to the n.e. and n. Braemar contains the highest mountains; Ben-Muic-Duhi (next to Ben Nevis, the highest hill in the British Isles), 4,296 ft.; Cairntoul, 4,241; Cairngorm, 4,084; Ben-na-Buird, 3,924; Lochnagar, 3,786. The predominant rocks are granite and gneiss. The granite is very durable, and is much used for building and polishing. The chief rivers are the Dee (87 m. long), Don (83 m.), and Ythan (85 m.), which run eastward into the North Sea; and the Doveran (62 m.), which runs n.e. into the North Sea (see **DEE**, **DON**, **DOVERAN**). On the upper part of the Dee is Bal-

ABERDEVINE—ABERNETHY.

moral (q. v.) The Ythan yields the pearl-muscle, but rarely pearls of any value. The mean annual rainfall of A. varies from 30 to 37 inches. Clay soils predominate near the coast, loamy soils near the centre, and poor, gravelly, sandy, and peaty soils, elsewhere. The most fertile parts lie between the Don and the Ythan, and in the n.e. angle of the county. Nowhere in the kingdom have the natural disadvantages of soil and climate been more successfully overcome. A. has 188 m. of railway, and 2,359 m. of public roads, the latter supported by rates, and not by tolls. The chief towns and villages are Aberdeen (New and Old), Peterhead, Fraserburgh, Huntly, Kintore, Inverury, and Turriff. The county returns two members to parliament; the city of Aberdeen, one; and the burghs of Peterhead, Kintore, and Inverury, with Elgin, Cullen, and Banff, one. About 37 per cent. of the area of A. is cultivated. In 1880, it had 195,316 acres in oats, 16,564 in barley and bere; 92,972 in turnips; and 152,106 cattle. A. produces one-fifth of the turnips, and one-seventh of the cattle reared in Scotland, and is unsurpassed in breeding and feeding stock. The fisheries on the coast are very productive. Pop., in 1871, 244,603; in 1881, 267,990; inhabited houses, 49,185. Above 80 per cent. of the children are at school. The munificent Dick and Milne bequests for parochial schoolmasters have given A. a high place in the statistics of education. A. has about 290 places of worship, 105 being Established, and 100 Free. Value of real property (exclusive of railways), in 1885, 6, £831,338.

ABERDEVINE, *ă-bér'dě-vîn*, or SISKIN (*Fringilla Spinus*): a song-bird, nearly allied to the goldfinch, with which it is placed by Cuvier and others in the new genus *Carduelis*. It is rather smaller than the goldfinch, and less elongated in form. The crown of the head and the throat are black, the nape dusky green, and there is a broad yellow streak above and behind each eye. It is only a winter visitant of Britain, and breeds in the n. of Europe, building its nest in high trees. It is frequently kept as a cage-bird, being easily tamed, and breeds freely with the canary. It feeds on the seeds of the thistle, alder, birch, and elm, and occasionally does great damage to the hop plantations in Germany. In France it injures the blossoms of the apple trees.

ABERGAVENNY, *ab'ér-gā'ne* (the Roman *Gobanium*): market-town of England, in Monmouthshire, 13 m. w. of Monmouth, beautifully situated in the valley of the Usk (the garden of Wales), at the junction of the Usk and Gavenny, and is surrounded by high mountains and thick woods. The town is regularly and compactly built. St. Mary's Church, formerly a fine cruciform structure, containing many interesting monuments, has been seriously marred by alterations. The castle, which is very ancient, is now a ruin. The principal modern building is the lunatic asylum. There are collieries and iron-works in the neighborhood. The Hereford and Tredegar Railway passes near the town. Pop. (1881), 7,285.

ABERNETHY, *ăb'ér-ne-thî*, JOHN: 1764-1831; b. Lon-

ABERRATION.

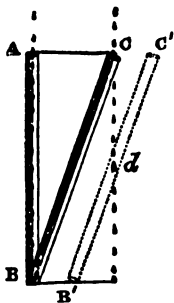
don; d. Enfield: eminent English surgeon. His grandfather was the Rev. John Abernethy, an Irish Presbyterian clergyman, who acquired distinction by his writings, and his bold adoption of Bishop Hoadly's views on the right of private judgment and the subscription of Confessions. A.'s early tastes disposed him to the bar; but in 1780 he was apprenticed to Mr. (afterwards Sir Charles) Blicke, surgeon of St. Bartholomew's Hospital. He attended at the same time the lectures of John Hunter and Sir W. Blizard. In 1787, A. was elected assistant-surgeon to St. Bartholomew's, an office which he filled for twenty-eight years, at the end of which time he was appointed surgeon, with a salary. Soon after his election he began to lecture in the hospital on anatomy and surgery, and may be said to have laid the foundation of its character as a school of surgery. At first he manifested extraordinary diffidence, but his power soon developed itself; and his lectures attracted such crowds that, in 1790, it was found necessary to build a lecture-theatre in the hospital for his use. His clear, simple, and positive style, illustrated by an inexhaustible variety of apt anecdotes, made him the most popular medical teacher of his day. In 1813, he was appointed surgeon to Christ's Hospital, and in 1814, Professor of Anatomy and Surgery to the College of Surgeons. His practice increased with his celebrity, which the singular eccentricity and occasional rudeness of his manners contributed to heighten. Notwithstanding, however, the irritability and harshness which he so often exhibited, those who knew him best bear unanimous testimony to the generosity and kindness of his character. He married in 1800, and had several children. Of his works, the most original and important is his *Observations on the Constitutional Origin and Treatment of Local Diseases*, first published, 1806, in which a simple principle, till then little attended to, was made the foundation of much important and ingenious observation. His *Lectures on the Theory and Practice of Surgery* were published, 1830.

ABERRATION, n. *ăb'ěr-ră'shŭn* [F. *aberration*—from L. *aberrātiōnem*, a transient escape from: L. *aberrans* or *aberran'tem*, wandering from or away—from *ab*, *erro*, I wander]: a wandering from the right way, as from truth; moral perversity; mental weakness; an apparent motion of the fixed stars. **ABERRANT**, a. *ăb'ěr-rănt*, differing widely; differing from the customary structure or type. **ABER'RING**, a. wandering. **ABERRANCE**, n. *ăb'ěr-răns*, also **ABERRANCY**, *ăb'ěr-răn-si*, a wandering from the right way. **ABERRATION OF LIGHT**, the deviation of rays of light from a true focus, resulting in an indistinct or colored image. **MENTAL ABERRATION**, a wandering or unsettled state of the mind resulting in incapacity for ordinary mental efforts. **SPHERICAL ABERRATION**, in *optics*, the dispersion of the rays of light in passing through a lens.—**SYN.** of 'aberration': madness; insanity; mania; idiocy; alienation; derangement; lunacy; dementia.

ABERRATION OF LIGHT, *ăb'ěr-ra'shŭn*:- an apparent alteration in the place of a star, arising from the motion of

ABERYSTWITH—ABET.

the earth in its orbit combined with the progressive passage of light. When rain is falling perpendicularly, a drop entering at the top of an upright tube at rest will go through; but if the tube be carried forward horizontally, a drop entering the top will strike against the side before it goes far; and to make the drop go through the tube in motion, we must incline the top of it forward in the direction of the motion. The amount of this inclination will be the greater the more rapid the motion of the tube is compared with that of the falling drops. If in the time that a drop takes to fall through the height AB of the parallelogram in the annexed cut, the inclined tube BC is moved horizontally over a space equal to its breadth, AC, a drop entering the top of the tube will descend without touching the sides. For in half the time the tube will be in the position B'C', and the drop in the position *d*; and so for any other portion of the time. This exactly illustrates the astronomical phenomenon in question. The tube is a telescope directed to receive the light of a star; this tube, and the person looking through it, are moving with the earth in its orbit, and the light may be conceived as particles coming from the star like drops of rain, moving much faster, no doubt, still requiring time. That a particle or ray of light from the star may pass through the tube, it must be directed, not straight to the star, but at a slight angle in the direction of the earth's motion. Thus the place where we see the star is not its true place. As the earth's motion, however, is slow compared with the velocity of light, the angle of inclination is small—never exceeding about 20''. The result is, that, if we conceive the true place of a star as a fixed point, the apparent place of the star describes about this true place, in the course of a year, an ellipse whose greater axis is about 40''. The aberration of light was discovered by the English astronomer Bradley, in 1727, while seeking to determine the parallax of certain fixed stars.



ABERYSTWITH, *ăb'ér-ist'with*: a seaport of Wales, and one of the Cardigan district of parliamentary boroughs. In 1880, 420 vessels, of a total tonnage of 80,937 tons, entered the port. A. is much resorted to for sea-bathing, and is well provided with good hotels and lodging-houses. Pop. (1871), 6,898; (1881), 6,664.

ABET, *v. ä-bët'* [AS. *a*, on or in; *betan*, to improve, to kindle: OF. *abetter*, to deceive, to incite: Norw. *abet*, a bait for fish: *abéter*, to bait the hook (see BAIT),—*lit.*, to allure to one's own destruction]: to aid; to incite; to encourage, chiefly in a bad sense. **ABETTING**, *imp.* **ABETTED**, *pp.* **ABETTOR**, *n. -tér*, one who abets or encourages, usually in a bad sense. **ABETMENT**, *n.* the act of abetting.—**SYN.** of 'abet': to encourage; incite; connive at; aid; assist; sustain; back up;—of 'abettor': an accessory; an accomplice; a backer-up.

ABEYANCE—ABILITY.

ABEYANCE, n. *ä-bä'äns* [OF. *abayer*, to gape at, to pant after: F. *aboyer*, to bark, to bay—from mid. L. *abbau-bärë*: Norm. F. *abbauance*, expectation: Scot. *abeigh*, to stand gaping at a thing (see **BAY**), *lit.*, state of expectancy]: state of being held back for a time; temporary suppression, as of an inheritance, or titles of honor and dignities. As a legal term it imports that a freehold inheritance, dignity, or office is not vested in any one, but is in expectation, or suspended, until the true owner appears, or the right thereto is determined. Titles of honor are said to be in A. when it is uncertain who shall enjoy them. A parsonage remaining void is also said to be in A. This A. or suspense, being repugnant to the general principles of the tenure of land, is never allowed except when it is unavoidable.

ABHOR, v. *äb-hör'* [L. *abhörreō*, I shrink back from with horror—from *ab*, *hörreō*, I shake or look terrible: F. *abhorrer*, to abhor]: to shrink back from with shuddering; to hate very much; to disdain; to detest. **ABHORRING**, imp. **ABHORRED**, pp. *äb-hörd'*. **ABHORRENCE**, n. *äb-hör'rëns*, very great hatred. **ABHOR'RER**, n. the person who abhors. **ABHORRENT**, a. *äb-hör'rënt*, hating; detesting; odious; repugnant to. **ABHOR'RENTLY**, ad. *-lī*.—**SYN.** of 'abhor': to detest; abominate; loathe; hate; disdain; despise; shrink from.

ABIB, *ä'bīb* [Hcb. *abīb*, a green ear of corn; *ab*, swelling, protuberant]: the month that barley was in the ear; the first month of the Jewish year; also called *Nisan*.

ABIDE, v. *ä-bid'* [AS. *abidan*; Goth. *beidan*, to expect: Icel. *bida*, to endure: OE. *abie*, to remain or endure, to suffer: AS. *abyegan*, to pay for]: to wait for with expectation; to attend or wait upon; to bear; to support; to tolerate; to pay the penalty. *Note.*—To **BUY** [for *abie*] IT **DEAR**, in OE., to suffer loss.

ABIDE, v. *ä-bid'* [AS. *abidan*, to await]: to dwell or stay in a place; to remain with; to continue; to be firm in. **ABID'ING**, imp. **ABODE**, pt., pp. *ä-böd'*: n. a house. **ABIDER**, n. *ä-bi'der*, one who. **ABIDINGLY**, ad. *-lī*. *Note.*—The two preceding titles are confusedly connected, though given separately.—**SYN.** of 'abide': to sojourn; dwell; live; reside; inhabit.

ABIES: see **FIR**.

ABIETITES, n. plu. *ä-bi'ë-ti'tëz*, or *-tits* [L. *abiës*, the fir-tree]: a genus of fossil conifers. **ABIETIC**, a. *äb-i'ët'ik*, pertaining to the fir-tree.

ABIGAIL, n. *äb'i-gäl* [after *Abigail* of Carmel, who called herself the *handmaid* of David; received an additional significance from *Abigail Hill*, afterwards Mrs. Masham, a waiting-woman of Queen Anne]: a waiting-maid; a maid in attendance; a lady's-maid.

ABILITY, n. *ä-bil'i-tī* [formed from **ABLE**, which see: L. *habilitas*, fitness or aptitude—from *hābëo*, I have: F. *habileté*, ability]: power to do a thing; power to do, whether with the body or mind—as contrasted with *capacity*, power to receive; aptitude; skill; legal right to do—in this sense

ABINGDON—ABJURATION.

the opposite is *disability*. ABILITIES, plu. *ă-bŭ'î-tîz*, mental endowments.—SYN. of 'ability': faculty; talent; capacity; capability; aptitude; dexterity; skill; address; cleverness; genius.

ABINGDON, *ăb'ing-dŏn*: a market town in Berkshire, England, at the junction of the Ock and the Thames. The name was originally Abbendon (town of the Abbey). Till 1885 it sent a member to parliament. Pop. of parliamentary borough (1881), 6,608.

ABIOGENESIS, n. *ăb'î-ŏ-jĕn'ĕ-sis* [Gr. *a*, without; *bîōs*, life; *gĕnĕsis*, origin, source]: spontaneous generation; the opposite of sexual generation; the production of life or living beings under certain physical conditions without the intervention of antecedent living forms.

ABIOGENESIS: see GENERATION, SPONTANEOUS.

ABJECT, a. *ăb'jĕkt* [L. *abjectu*, cast from, downcast—from *ab*, *jactus*, thrown or cast—from *jacĕō*, I throw]: cast down; mean and servile; worthless and despicable. ABJECTLY, ad. *-lĭ*, in an abject manner; meanly and servilely. ABJECTION, n. *ăb-jĕk'shŭn*, also ABJECTNESS, n. and ABJECTEDNESS, n. a mean or low state; meanness of spirit; servility.

ABJURATION, OATH OF, *ăb'joo-ră'shŭn*: In Great Britain, formerly, there were three oaths, called the Oaths of Allegiance, Supremacy, and Abjuration, required of all persons before admission to any public office; and next, by the 21 and 22 Vict. c. 48, one oath was substituted for the three referred to.

The subject of oaths was, however, again revised by the legislature, 1868 and 1871, and was settled in the following manner by the act 31 and 32 Vict. c. 71.

The former statutes prescribing certain forms of oaths were repealed, and the above form of oath was abolished, and the abjuration altogether omitted as no longer fit to be perpetuated among the solemn sanctions applicable to high offices. Three several oaths were prescribed to take the place of the former oaths, and these were—(1) the oath of allegiance, (2) the official oath, (3) the judicial oath. Certain high officers are now required to take both the oath of allegiance and the official oath, and certain other officers to take both the oath of allegiance and the judicial oath. The oath of homage taken by archbishops and bishops, and of canonical obedience to them, was left unaffected. But the oath of allegiance was substituted for the oaths taken by the clergy, members of parliament, judges, etc. This oath of allegiance is in the following form: 'I, A. B., do swear that I will be faithful and bear true allegiance to her Majesty, Queen Victoria, her heirs and successors, according to law. So help me God.' This oath is free from the objections formerly felt by Jews in taking the oath.

The act 34 and 35 Vict. c. 48 repealed nearly all the previous statutes as to oaths.

The act of 10 Geo. IV. c. 7, which settled the form of oath to be taken by Roman Catholics instead of the oaths of

ABJURE—ABNORMAL.

Allegiance, Supremacy, and Abjuration, was part of a memorable settlement; but having frequently been considered objectionable, as covertly imputing disloyalty and insincerity to the Roman Catholic body, it has been superseded by the above short oath of allegiance common to all parts of the United Kingdom.

ABJURE, v. *ăb-jôr'* [F. *abjurer*—from L. *abjurāre*, to deny on oath—from *ab*, *jūro*, I swear: It. *abjurāre*]: to deny or renounce upon oath; to renounce with solemnity. **ABJURED**, pp. *ăb-jórd'*. **ABJU'RING**, imp. **ABJURATION**, n. *ăb'joo-ră'shŭn*, renouncing upon oath: **ABJU'ROR**, n. *-rér*, one who denies upon oath. **ABJU'RATORY**, a. *-ra-tér-ĭ*, containing abjuration. **OATH OF ABJURATION**, an oath in which is asserted the sole right of the present royal family to the British crown, expressly disclaiming any rights or claims on the part of the Pope or Pretender—in 1858 one oath was substituted for the three oaths of Abjuration, Allegiance, and Supremacy.—**SYN.** of 'abjure': to renounce; recant; retract; revoke; recall; repudiate.

ABLACTATION, n. *ăb'lăk-tă'shŭn* [L. *ablactātiōnem*, the act of withdrawing from milk, weaning—from *ab*, *lacto*, I suckle—from *lac*, milk]: the weaning of a child from the breast; a method of ingrafting, now called inarching.

ABLATIVE, n. *ăb'lă-tĭv* [L. *ablătivus*, the ablative case—from *ab*, *lātus*, carried: It. and Sp. *ablătivo*: F. *ablatif*]: name of a case in Latin nouns, in which the ideas of carrying away or taking from are signified. See **DECLENSION**. **ABLATION**, n. *ăb-lă'shŭn*, a taking away. **ABLATIVE ABSOLUTE**, a Latin construction in which a noun and a participle are each put in the ablative case.

ABLAZE, ad. *ă-blăz* [AS. *a*, on; Eng. *blaze*]: on fire; in a blaze.

ABLE, a. *ă-bl* [OF. *able*: Norm. F. *hable*, able—from L. *hăbĭlis*, able, fit, adapted—from *hăbĕo*, I have, I hold: F. *habĭle*; It. *abile*, able (see **ABILITY**): fit by the possession of sufficient power; having sufficient power to do; qualified; skilful; fitted for. **ABLY**, ad. *ă-blĭ*, with ability. **ABLENESS**, n. *ă-bl-nĕs*, ability, capability. **A'BLE-BOD'IED**, *-ĭd*, having a sound, strong body; able to work; being a competent and skilled seaman.—**SYN.** of 'able': capable; capacious; qualified; skilful; fit.

ABLUTION, n. *ăb-lô'shŭn*, [L. *ablutĭōnem*, a cleansing; *ab'luĕns*, cleansing—from *ab*, *lŭo*, I wash]: a washing, cleansing, or purification by water; the water used in washing. **ABLUENT**, a. *ăb-lô-ĕnt*, cleansing by liquids: N. an attendant or purifier. See **PURIFICATION**.

ABNEGATE, v. *ăb-nĕ-găt* [L. *abnĕgātus*, refused, denied—from *ab*, *nĕgo*, I deny]: to deny; to renounce. **AB'NEGA'TING**, imp. **AB'NEGA'TED**, pp. **AB'NEGA'TION**, n. *-shŭn*, a denial; self-denial. **AB'NEGA'TOR**, n. *-tér*, one who denies or opposes anything.

ABNORMAL, a. *ăb-nŏr'măl*, also **ABNOR'MOUS**, a. *-mŭs* [mid. L. *abnormis*, irregular—from L. *ab*, from, away from; *norma*, a rule]: not according to rule; irregular; anything

ABO—ABOLITIONISTS.

out of the usual or natural course; without rule or precedent. **ABNORMALITY**, n. *äb'nör-mäl'i-ti*, or **ABNORMITY**, n. *äb-nör'mi-ti*, irregularity; deformity.—**SYN.** of 'abnormal': aberrant; eccentric; exceptional; erratic.

ABO, *ö'bó*: chief town of the government of Abo, in Finland, now belonging to the Russian Empire; on the river Aurajokki, near its embouchure in the Gulf of Bothnia; pop. (1880), 22,967. The town was founded by the Swedes, 1157, and remained the capital of Finland until 1819. In the year 1827, a great part of the town, including the university buildings, was destroyed by fire, and consequently the university was removed to Helsingfors, now the capital.—The *Peace of Abo*, 1743, between Sweden and Russia, put an end to the war commenced by Sweden, under French instigation, in 1741. In this war, Russia had gained possession of the whole of Finland through the misconduct of the Swedish generals. In this treaty the river Kymene was made the boundary between the territories of Sweden and Russia; but by another peace, concluded 1809, the whole of Finland, as far as the Tornea, was ceded to Russia.—The government of Abo Björneborg has 9,450 sq. m.; pop. (1880), 340,602.

ABOARD, prep. and ad. *ä-börd'* [**AS.** *a*, on; **Icel.** *bord*, the side of a ship]: on or in a ship or boat.

ABODE, n. *ä-böd'* [see **ABIDE** 2]: a habitation; a place of residence; stay or continuance; pt. and pp. of *abide*: in *OE.*, stop, delay.

ABODE, v. *ä-böd'* [**AS.** *a*, intensive; *gebod*, a command, a precept: **AS.** *bodian*; **Icel.** *botha*, to proclaim: **Scot.** *bode*, to portend]: in *OE.*, to foretoken; to be an omen. **ABOD'ING**, n. presentiment. **ABODEMENT**, n. *ä-böd'mént*, a secret anticipation of a future thing, good or bad; an omen.

ABOLISH, v. *ä-böl'ish* [**L.** *abolēscere*, to decay or wear away: **F.** *abolissant*, abolishing—from *abolir*, to abolish—from **L.** *abolere*, to take away, to annul]: to hinder a thing from growing or increasing; to put an end to; to make void; to annul; to destroy. **ABOL'ISHING**, imp. **ABOL'ISHED**, pp. *-isht*. **ABOL'ISHER**, n. the person that puts an end to. **ABOLISHABLE**, a. *ä-böl'ish-ä-bl*, that may be put an end to or destroyed. **ABOLISHMENT**, n. *ä-böl'ish-mént*, also **ABOLITION**, n. *äb'ö-lish'ün*, the act of putting an end to or destroying; emancipation. **ABOLITIONIST**, n. *äb'ö-lish'ün-ist*, a person who favors the putting an end to anything, as slavery. **ABOLITIONISM**, n. *äb'ö-lish'ün-izm*, the tenets of the abolitionists.—**SYN.** of 'abolish': to abrogate; repeal; revoke; annul; cancel; set aside; nullify; annihilate.

ABOLITIONISTS, *äb'ö-lish'ün-ists*, a term used to designate a party in the U. S., who sought the immediate and total abolition of slavery. See **SLAVERY**. Abolitionist views had long been held by many, especially by members of the Society of Friends; but the term was not commonly used until an aggressive party spread from New England throughout the North and West, demanding immediate and unconditional emancipation. After about 30 years of agi-

ABOMASUS—ABORIGINES.

tation, Abolitionism in a greatly modified form—demanding only the restriction of slavery from entering on new territory, yet almost unconsciously looking towards its entire extinction—gained a political advocacy in the republican party. The ends of the A. were gained when, under Lincoln's administration, slavery was abolished, 1863, Jan. 1.

ABOMASUS, n. *ăb'ô-mă'zûs*, also AB'OMA'SUM, n. *-zûm* [new L. *abômāsus*—from *ab*, *ômāsum*, tripe]: the fourth stomach of ruminating animals; the part of the paunch nearest the intestines.

ABOMEY: the capital of Dahomey, in w. Africa, is situated in n. lat. 7°, e. long. 2° 4', about 60 m. n. of Whydah, the port of the kingdom. The town is built of clay, surrounded by a moat and mud walls, and occupies a large area, part of which is cultivated. The houses stand apart; there are no regular streets, and the place is very dirty. It has four large market places, and trade is carried on in palm-oil, ivory, and gold, Mohammedan traders from the interior resorting to its markets. The town contains the principal palace of the King of Dahomey. It is the scene of frequent human sacrifices, a 'custom' being held annually, at which many criminals and captives are slain, while, on the death of a king, a 'grand custom' is held, at which sometimes as many as 2,000 victims have perished. The slave-trade is also prosecuted, and the efforts of the British Government to induce the king to abolish it and the 'customs' have proved unsuccessful. Population about 30,000. See DAHOMEY.

ABOMINATE, v. *ă-bôm'î-nât* [L. *abôminātus*, wished away, detested—from *ab*, *ômen*, a portent: F. *abominer*, to loathe]: to loathe as an ill-omened thing; to hate excessively; to detest. ABOM'INA'TING, imp. ABOM'INA'TED, pp. ABOMINABLE, a. *ă-bôm'î-nă-bl*, very hateful; detestable. ABOM'INABLY, ad. *-blî*, in an abominable manner. ABOM'INABLENESS, n. *-bl-nēs*, state of being very hateful. ABOMINATION, *ă-bôm'î-nă-shûn*, an object of extreme hatred or detestation; evil doctrines or practices; that which causes pollution; shameful vice. THE ABOMINATION OF DESOLATION, probably some notable profanation of the holy Temple at Jerusalem by the zealots before the final siege by the Romans (Matt. xxiv. 15).—SYN. of 'abominate': to abhor; detest; loathe; hate;—of 'abominable': detestable; execrable;—of 'abomination': loathing; detestation; aversion; odiousness; disgust.

ABORIGINES, n. *ăb'ô-rîj'î-nēz* [L. *Abôriginēs*, ancestors of the anc. Latins, original inhabitants—from *ab*, *origo*, a beginning or origin, *orig'inis*, of a beginning]: the first or primitive inhabitants of a country; the original stock, flora or fauna, of a geographical area. ABORIGINAL, a. *ăb'ô-rîj'î-năl*, first; primitive: N. an original inhabitant of a country. AB'ORIG'INALLY, ad. *-lî*, after the manner of aborigines; in primeval times.

ABORIGINES (Lat.): properly the earliest inhabitants of a country. The corresponding term used by the Greeks was *Autochthones*. The Roman and Greek historians, how-

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ever, apply the name to a special people, who, according to tradition, had their original seats in the mountains about Reate, now Rieti; but, being driven out by the Sabines, descended into Latium, and in conjunction with a tribe of Pelasgi, subdued or expelled thence the Siculi, and occupied the country. Who they were, or whence they came, is uncertain. The stories about the landing of Æneas in Italy, after the siege of Troy, represent the A. as at first opposing and then coalescing with the Trojans. The A. then disappear as a distinct people, they and their allies the Pelasgi having taken the name of Latini. The traditions clearly point to the fact that the Latins were a mixed race, a circumstance which is proved by the structure of their language, in which we find numerous words closely connected with the Greek, and also numerous words that are of an entirely different origin. These non-Greek words are mostly related to the dialects of the Oscan tribes. The non-Pelasgic element of the Roman population is supposed to represent these A., who would thus belong to the Oscans or Ausonians. In modern times the term A. has been extended in signification, and is used to indicate the inhabitants found in a country at its first discovery, in contradistinction to colonies or new races, the time of whose introduction into the country is known.

ABORT. v. *ă-bört'* [L. *abörtus*, miscarried; *abörtiō*, a miscarriage—from *ab*, *orior*, I arise]: in *OE.*, to bring forth before the time. **ABORT'ING**, imp. **ABORTED**, pp. *ă-bört'éd*, brought forth before its time; imperfect from birth. **ABORT.MENT**, n. *ă-bört'měnt*, an untimely birth. **ABORTION**, n. *ă-bört'shŭn*, anything that has not come to maturity; an untimely birth; failure; a coming to naught. **ABOR'TIVE**, a. *-tīv*, that has not come to maturity; immature; premature; empty. **ABOR'TIVELY**, ad. *-lī*, as a thing born before its time; prematurely. **ABOR'TIVENESS**, n. the condition or state of being abortive.

ABORTION.

ABORTION, *ă-bôr'shûn*: term in Medicine to denote the expulsion of the product of conception (the impregnated ovum) from the womb before the sixth month of pregnancy. If the expulsion takes place after that date, and before the proper time, it is termed a *premature labor* or *miscarriage*. In law, no such distinction is made. The frequency of A. as compared with normal pregnancy is very differently estimated by different writers; but the best evidence leads us to the belief that A. is of far more common occurrence than is generally supposed, and that it takes place on an average in one out of every three or four cases of pregnancy. The following are among the *causes predisposing* to this accident: (1) A diseased condition of either parent, and especially a syphilitic taint. (2) A peculiar temperament on the part of the mother. Those women who present a strongly-marked nervous or sanguine temperament seem to abort with singular facility; and the same tendency is observed in those in whom the catamenial or monthly discharge is abundant or excessive. Again, very fat women, though they have a tendency to sterility, are liable to abort when pregnancy does occur. Any cause interfering with the normal oxidation of the blood—as, for instance, the constant breathing of impure air, may provoke A—a fact excellently illustrated by the experiments of Brown-Séquard on pregnant animals (rabbits), when he showed that the application of a ligature to the windpipe excited uterine contractions, ending, if the experiment were continued long enough, in A., but ceasing if air was freely readmitted into the lungs. Change of climate, as from India to England, certainly predisposes to this accident; and it has been observed by various writers that great political events, the horrors of war, and famine, exert a similar action. The marvellous events in Paris in 1848 were speedily followed by an extraordinary number of abortions and of still-born children; and a similar fact had been previously noticed by the elder Nagele and Hoffmann during the famine of 1816 and during the siege of Leyden. Among the causes predisposing to A., must be included the employment of such corsets and other garments as by their tightness interfere with the circulation of the blood, and alter the natural position of the womb and of the abdominal viscera. Many diseases supervening during the course of pregnancy, especially the eruptive fevers (as small-pox, scarlatina, etc.), almost invariably lead to A. of a very dangerous character; and it has been known from the time of Hippocrates that intermittent fevers have this effect. Among the *direct causes* of A. may be placed blows on the abdomen, falls, any violent muscular efforts, too long a walk or ride on horseback (indeed, women with a tendency to abort should avoid horseback during pregnancy), a severe mental shock, etc. Moreover, the death of the fœtus from any cause is sure to occasion abortion.

The *symptoms* of A. vary according to the stage of pregnancy at which it is threatened, and according to the exciting cause. Many of these resemble those of congestion of the womb, such as a sensation of weight or painful pres-

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sure in the region of the loins or sacrum, extending to the bladder and rectum (with or without Tenesmus, q.v.); these symptoms being aggravated by standing or walking, and being accompanied by chills, accelerated pulse, loss of appetite, and a general feeling of discomfort. A discharge of serous fluid, sometimes slightly tinged with blood, is then observed. The feeling of weight is replaced by pains, leading to the expulsion of the ovum, which, during the first two months, is so small as commonly to escape detection. In more advanced stages of pregnancy, the pains are more severe, the discharge is more abundant, and consists chiefly of blood; and after more or less time, the product of conception escapes either in whole or in part. In the former case, the patient has little further trouble; in the latter, hemorrhage will probably continue, and the parts retained may putrefy, and give rise to serious symptoms. After about the commencement of the fourth month, the symptoms gradually approximate to those presented in ordinary parturition.

In the *treatment of A.*, prophylactics (or the guarding against causes likely to lead to it) hold the first place. Women liable to this affection should, on the slightest threatening, assume as much as possible the horizontal position, avoiding all bodily exertion or mental excitement. They should use non-stimulating foods and drinks, and keep the bowels open by gentle aperients—such as manna and castor-oil, and carefully avoid aloes and other medicines irritating the lower bowel. Moreover, a separate bedroom must be insisted on by the physician. If it is deemed necessary to check hemorrhage before professional aid can be called in, cloths soaked in cold water may be applied locally (care being taken to change them before they grow warm), and iced water containing an astringent, such as a little alum, may be given internally. Further proceedings must be left to the medical attendant.

There are occasional cases (as where the outlet of the pelvis is very contracted) in which it is necessary to induce *A.* by professional means. All attempts at procuring criminal *A.*, either by the administration of powerful drugs, or the application of instruments, are accompanied with extreme danger to the pregnant woman.

ABORTION, in Criminal Law: the procuring, or using, or advising means for procuring the expulsion of the fœtus of a pregnant woman before the seventh month of utero-gestation—unless necessary to preserve the woman's life. When *A.* is produced with a malicious design, it becomes a misdemeanor at common law, and the party causing it may be indicted and punished. The criminal means resorted to for the purpose of *A.* include the use of drugs and the application of mechanical or forcible measures. When, in consequence of the means used to produce *A.*, the death of the woman ensues, the crime is murder, or manslaughter in one or the other degree, according to local statute. By the law of N. Y. the soliciting on the part of a woman pregnant with a quick child of any drug or application for the purpose of producing *A.* is made a misdemeanor, punishable

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by fine and imprisonment, either, or both. In Mass. the act, where the death of the woman results, is made a felony, punishable by from five to twenty years imprisonment; where death does not ensue it is a misdemeanor. The laws of the States of Conn. and Missouri are similar to these.

ABOUKIR, *â'bô-kêr'*: the ancient *Canopus*, now an insignificant village on the coast of Egypt, about 13 m. n.e. of Alexandria. The castle of Aboukir stands on the w. side of the bay of the same name. This bay is celebrated on account of Nelson's victory here gained over the French fleet, 1798, Aug. 1. The French fleet was stationed in a curved line near a small island guarded by a battery; but Nelson, with his usual intrepidity, forced a passage with half of his fleet of fifteen vessels between the island and the French line of battle, while the other half attacked the enemy in front. The French admiral, De Brueys, was killed by a cannon-ball, and his flag ship, *l'Orient*, was destroyed by fire. Only 60 or 70 men were saved out of a crew of 1,000. The French fleet was completely defeated, and only two vessels escaped.

ABOUND, v. *â-bownd'* [*F. abonder*, to abound: *L. abundo*, I overflow—from *ab, unda*, a wave: *It. abbondare*: *Sp. abundar*—*lit.*, to flow, as wave after wave]: to have or possess in great quantity; to be present in great quantity. **ABOUNDING**, imp. **ABOUNDED**, pp. **ABUNDANCE**, n. *â-bûn'dâns*, great store; overflowing quantity. **ABUNDANT**, a. plentiful; fully sufficient. **ABUNDANTLY**, ad. *-lî*, in great quantity; liberally in supply.—**SYN.** of 'abundant': copious; teeming; ample; plentiful; plenteous; exuberant; overflowing; rich;—of 'abundance': plenty or plenteousness; copiousness; exuberance; overflow; riches; wealth; affluence.

ABOUSAMBUL, *â'bô-sâm-bôl'*, or **IPSAMBUL**: a place on the left bank of the Nile, in Nubia, lat. 22° 22', the site of two very remarkable rock-cut temples, perhaps the oldest existing specimens of architecture in the world. The larger temple contains 14 apartments, hewn out of the solid rock. The first and largest of these is 57 ft. long and 52 broad, and is supported by two rows of massy square pillars (four in each row), 30 ft. high. To each of the pillars is attached a standing colossus, reaching to the roof, overlaid with a kind of stucco, and painted with gaudy colors. In front of the temple are four colossal seated figures—the largest pieces of Egyptian sculpture yet discovered. Reproductions of two of these, on the scale of the original (65 ft. in height), form very striking objects in the Crystal Palace at Sydenham, where also may be seen a fac-simile, on a small scale, of the temple itself. These figures are supposed to represent Rameses the Great (or Sesostris), whose achievements are described on the painted walls of the temple.

ABOUT.

ABOUT, prep. *à-bout'* [AS. *a'utan*—from *a*, on; *be*, by; *utan*, outward; *on-be-utan*, on by outside]: around by the outside; encircling; near to; concerning: AD. nearly; here and there; round, as the longest way; engaged or employed in. **ABOUT** or **ABOUT TO**, upon the point; within a very small distance. **TO BRING ABOUT**, to bring to the state desired. **TO COME ABOUT**, to happen or take place as expected. **TO GO ABOUT**, to prepare to do a thing; to endeavor. **TO PUT ABOUT**, to turn a ship at sea.

ABOUT, *à-bô'*, EDMOND FRANÇOIS VALENTIN : 1828-85; b. Dieuze, Lorraine: a French *littérateur* of great reputation. He studied first at the Lycée Charlemagne, where he greatly distinguished himself; afterwards at the École Normale. In the beginning of 1852, he received an appointment to the French School at Athens, an institution supported by the French government, with no very definite object, but with the hope that the members, who are selected on account of their attainments and promise in scholarship, and left perfectly free to choose their own studies, may make contributions to the history or the archæology of Greece. A. remained at Athens about two years. He wrote, as required by the terms of his appointment, a Memoir for the Academy of Inscriptions, entitled *L'Ile d'Égine*; but it was as the satirist of modern Greece, not as the investigator of Grecian antiquities, that his name first became familiar to the public. On his return to France, towards the end of 1853, he published *La Grèce Contemporaine*, a work which at once attained to great popularity, and was in course of the following year translated into several foreign languages. This work, full of lively and pointed sketches, abounding in shrewd and witty observation, its censures, very severe as they were, scarcely seeming offensive, from the ease and perfect good-humor with which they were conveyed, at once gave its author place among the most promising writers of the day. It unquestionably affected European opinion as to the character and the capabilities of the modern Greeks; the truthfulness of its portraiture being confirmed by all who had special knowledge of this people. It gave earnest of the qualities which go to making a brilliant novelist; and his first novel, *Tolla*, appeared in the *Revue des Deux Mondes*, and was republished early in 1855. It did not disappoint the public expectations; but the author had laid himself open to a charge which, whenever it can be colorably sustained, is disastrous. He had taken many of his leading incidents from an Italian work, *Vittoria Savorelli*, published 1841, and soon afterwards withdrawn, the incidents contained in which were well known as actual occurrences; and though something of this was hinted in his book, there was no distinct acknowledgment of it. From the cry of plagiarism which was raised against A., his reputation suffered for a time. His comedy, *Guillery*, brought out 1856, Feb., at the Théâtre Français, did not make his peace with the Parisians; it was a complete failure with the theatre-going public, and had to be withdrawn after two representations. A set of stories which he now began to contribute to the *Moniteur*, however,—*Les Mariages de Paris*,—had a success

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which more than made up for the savage criticism which he had endured; they placed him high in public favor; and his career became a series of successes. *Les Mariages de Paris* was followed by *Le Roi des Montagnes* (1856), *Germaine* (1857), *Les Echasses de Maître Pierre* (1857), *Le Turco* (1866), *L'Infâme* (1867), and *Les Mariages de Province* (1868).

In 1859, after a tour in Italy, of a portion of which he contributed a description to the *Moniteur*, A. published a political pamphlet—*La Question Romaine*—which, displaying the same qualities as his early work on Greece, but matured, and wielded for a definite object, and being, moreover, regarded as written with the approval of the Emperor of the French, made a sensation throughout Europe. His object was to expose the abuses of the ecclesiastical government at Rome; and numerous answers to his work were made by friends of the papacy. In the following year, he published two political pamphlets, *La Nouvelle Carte d'Europe*, and *La Prusse en 1860*; both of which, being taken as indicative of the Emperor Napoleon's leanings, underwent criticism in all parts of Europe. A second work on Rome—*Rome Contemporaine*—appeared in 1861. A. was decorated with the Legion of Honor, 1858.

To the last he produced novels with unabated popularity; he also wrote several slight dramatic pieces, which have been favorably received. The list of his works is familiar to those interested in French contemporary fiction. In 1864, he published *Le Progrès*, a work of considerable pretensions, in which he discussed at great length, but with his usual liveliness of style, the existing state of society, especially in France, and the methods of improving it. His conclusion was that in France there were needed for progress the liberty of association (for the purposes of production and trade), an amendment of the land-system, a proper distribution of population as between country and town, the absence of police interference in the affairs of private persons, freedom of religious worship, and similar conditions. In 1868, A. became a leading contributor to the *Gaulois* newspaper. At the outbreak of the Franco-German war, 1870, he accompanied the army of MacMahon to Alsace as special correspondent of the *Soir*, and in 1872 he became editor of *Le XIX^{me} Siècle*. He published *Alsace*, 1872. In the same year he suffered, for some abusive newspaper articles, a week's imprisonment, from the German authorities. In 1884, he was elected a member of the Academy.

ABOVE, ad. *ä-būv'* [AS. *abūfan*—from *a*, on; *be*, by; *ufa*, high; Dut. *boven*]: on the high side; overhead; in a higher position. **PREP.** higher in place, rank, power, or excellence; in excess. **ABOVE-BOARD**, openly. **ABOVE ALL**, in preference to all other things. **ABOVE CITED** or **ABOVE MENTIONED**, taken notice of in the preceding part of a book. **ABOVE GROUND**, alive; not buried.

ABRACADABRA, n. *äb'ră-kă-dăb'ră*: a word said to be of Persian origin, and to designate in that language Mithra, the sun-god. It was in former times the most venerated of those magical formulas that were constructed out of the let-

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ters of the alphabet, and was supposed to be highly efficacious for the cure of fevers, and especially quartan and semi-tertian agues. Serenus Sammonicus gives the following directions for its use: Write the letters of the word so as to form a triangle, capable of being read many ways, on a square piece of paper. Fold the paper so as to conceal the writing, and stitch it into the form of a cross with white thread. This amulet wear in the bosom, suspended by a linen ribbon for nine days. Then go in dead silence, before sunrise, to the banks of a stream that flows eastward, take the amulet from off the neck, and fling it backwards into the water. If you open or read it, the charm is destroyed. The adjoining is one of the principal forms of arranging this mystic word.

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A B R A C A D A B B A
A B R A C A D A B B
A B R A C A D A B
A B R A C A D A
A B R A C A D
A B R A C A
A B R A C
A B R A
A B R
A B
A

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ABRADE, v. *ă-brăd'* [L. *abrādo*, I rub or scrape off—from *ab*, *rādo*, I scrape]: to rub or scrape off; to waste or wear off by friction. **ABRA'DING**, imp. **ABRA'DED**, pp. **ABRASION**, n. *ăb-ră'zhūn* [L. *rāsūs*, scraped]: the operation of wearing away by rubbing or friction; a superficial injury from friction; the matter worn off.

ABRAHAM, *ă'bră-hām*: the progenitor of the Israelitish nation, whose narrative is in the book of Genesis. He was a native of Chaldæa, but migrated, with his wife Sarah and his nephew Lot, to Caanan, where he lived a nomadic life, and worshipped the one God, Jehovah, in the midst of the polytheistic Canaanites. A. died at the age of 175 (reckoned at about 1800 B.C.). Of his two sons, Isaac was the ancestor of the Israelites; and the Arabs claim to be descended from Ishmael, whose mother was Hagar, a bond-woman. Later tradition ascribed to A. a complete knowledge of astronomy and philosophy, the invention of alphabetic writing, the art of interpreting dreams, etc. Even among Mohammedans, A. is reckoned a prophet and the friend of God; and they attribute to him the building of the sacred Kaaba at Mecca.

ABRAHAM-A-SANCTA-CLARA, *ă-sănk'tă-kłá'rá*: 1642–1709; d. Vienna: a very eccentric but popular and useful German preacher. His real name was **ULRICH MEGERLE**, but he is generally known by the name given to him in his monastery. Uncouth puns, coarse expressions, and strange freaks of humor marked his sermons; but beneath their fantastic shells they had good kernels. A. was an honest, faithful, and devoted priest, as was proved by his self-sacrificing conduct during the plague in 1679. Though very severe in his reproof of vice, he was highly esteemed. The singular style of his writings is indicated by their very titles, e.g., *Gack Gack*, i.e., *Wallfarth Maria Stern in Teza*; *Heil-sames Gemisch-Gemasch* (Wholesome Hodge podge). His collected works amount to twenty vols. (1835). A selection was published in 2 vols. (1846).

ABRAHAMIC—ABRAXAS STONES.

ABRAHAMIC, *a. ā-brā-hām'ik*: of Abraham or his age. **ABRAHAM'S BOSOM**, the condition of repose of the blessed at death,—named in reference to the ancient custom at meals of the dearest friend leaning his head on one's bosom, as St. John on the bosom of Christ.

ABRAHAMITES, *its*, or Bohemian deists: a number of residents in Bohemia who, trusting in the edict of toleration issued by Joseph II., avowed themselves, 1782, as believers of the doctrine alleged to have been held by Abraham before his circumcision. As early as the 9th c., a sect of the same name had arisen in Syria, and had denied the divinity of Christ. But the Bohemian deists professed to be followers of John Huss, though they held no Christian doctrine beyond that of the unity of God, and accepted nothing of the Bible save the Lord's Prayer. As they would join neither Jewish nor Christian sects, the emperor refused to tolerate them; and in 1783 expelled them from their native land, and scattered them in various parts of Hungary, Transylvania, and Slavonia, where many were made converts to the Roman Catholic Church, while others died as martyrs to their simple creed.

ABRAHAM-MEN: a class of sturdy beggars in England who simulated lunacy, and wandered about the country in a disorderly manner; at one time working on the sympathy, and at another on the fears, of women, children, and domestics. They were common in Shakespeare's time, and seem to have existed even as late as the period of the civil wars. The term is a cant one. 'An Abram cove,' as Decker, in his *English Villanies*, calls one of these mendicants, meant one who personated a 'Tom o' Bedlam.' He would 'disguise himself in grotesque rags, with knotted hair, long staff, and with many more disgusting contrivances to excite pity,' but he did not hesitate to live by thieving too, and when detected pilfering or in any species of depredation, he pleaded the immunities of the real Bedlamite, who was formally permitted to roam about the country when discharged from 'Bethlem Hospital.' A verbal relic of this class is still preserved in the slang phrase, 'to sham Abraham.'

ABRANCHIATA, *n. plu. ā-brāng'kī-ā-tā* [Gr. *a*, without; *brāngchū*, the gills of a fish]: applied to animals which are destitute of gills, or organs adapted for breathing air dissolved in water, as the leech, earthworm, etc. **ABRANCHIATE**, *a. -kī-āt*, destitute of gills or branchiæ.

ABRANTES, **DUKE OF**: see **JUNOT**.

ABRAXAS STONES, *a-brāx'as*:- so called from having the word *abraxas* or *abrasax* engraved on them. They are cut in various forms, and bear a variety of capricious symbols, mostly composed of human limbs, a fowl's head, and serpent's body. These gems, whose value and significance have been greatly exaggerated, are common in collections, and are represented as coming from Syria, Egypt, and Spain. It is certain that the use of the name abraxas was at first peculiar to the Gnostic sect of the Basilidians (q.v.); and probably the word, by taking the numerical value of its Greek letters, may signify the number 365, so

ABREAST—ABROGATION.

that there is no need to have recourse to old Persian or Egyptian, as is sometimes done. The Basilidians, however, did not designate by this name the highest deity, but the spirits of the world collectively. At a later period the doctrines and practices of the sect were carried by the Priscillianists to Spain, whence many of these stones are got. Gnostic symbols were afterwards adopted by all sects given to magic and alchemy; and thus there is little doubt that the greater part of the abraxas-stones were made in the middle ages as talismans.

ABREAST, ad. *ā-brēst'* [AS. *a*, on; Eng. *breast*]: side by side; keeping equally forward; opposite to; over against.

ABRENOUNCE, v. *āb'rě-nouns'* [mid. L. *abrēnun'ō*, I renounce absolutely: L. *ab*, from; Eng. *renounce*]: in *OE.*, to renounce wholly; to reject absolutely. **ABRENUNCIATION**, n. *āb'rě-nūn-shī-ā'shūn*, the act of renouncing absolutely.

ABREPTION, n. *āb-rěp'shūn* [L. *abreptus*, seized and carried off—from *ab*, *rāpiō*, I seize]: a carrying away.

ABRIDGE, v. *ā-brīj'* [F. *abréger*; Prov. *abbeujar*, to abridge—from mid. L. *abbrēviāre*—from L. *ab*, *brēviō*, I shorten]: to shorten by using fewer words; to make anything shorter or less; to epitomize. **ABRIDG'ING**, imp. **ABRIDGED**, pp. *ābrīj'd'*. **ABRIDG'ER**, n. one who abridges or makes less. **ABRIDGMENT**, n. *ā-brīj'měnt*, a thing made less in size or extent; the substance of a larger work in a shorter form; an epitome. In *OE.*, to **ABRIDGE FROM** or **OF**, to cut off from; to deprive of.—**SYN.** of 'abridge': to abbreviate; curtail; contract;—of 'abridgment': compendium; epitome; digest; summary; abstract; draught; synopsis; precis.

ABROACH, v. *ā-brōch'* [AS. *a*, on; Eng. *broach*: mid. L. *brocca*; F. *broche*, a spit, a needle: F. *brocher*, to pierce]: to pierce a barrel of liquor with a sharp instrument; to let out liquor, as from a cask. **AD.** in a position to run out, or yield the contained liquor; in a state to be spread or diffused; afloat.

ABROAD, ad. *ā-brawd'* [AS. *a*, on; Eng. *broad*]: spread far and wide; in the open air; beyond the limits of a place, as a house; to a foreign country; widely.

ABROGATE, v. *āb'rō-gāt* [L. *abrōgātus*, annulled, repealed—from *ab*, *rogo*, I ask—*lit.*, to ask permission to do away with]: to repeal; to abolish; to make void. **AB'ROGA'TING**, imp. **AB'ROGA'TED**, pp. **ABROGATION**, n. *āb'rō-gā'shūn*, the repeal of a law by authority. **ABROGABLE**, a. *āb'rō-gā-bl*, that may or can be repealed.—**SYN.** of 'abrogate': to annul; repeal; abolish; make void; set aside; revoke; cancel; recall.

ABROGATION of Laws: the destruction, or annulling of a former law, by an act of the legislative power, or by usage. **A.** is express when it is literally pronounced by the new law, either in general, or particular terms. It is implied when the new law contains provisions positively contrary to the former laws, without expressly abrogating such laws. It is implied, also, when the order of things for which

ABROOD—ABRUZZO.

the law had been made no longer exists, and hence the motives which had caused its enactment have necessarily ceased to operate.

ABROOD, ad. *ă-bród'* [AS. *a*, on; Eng. *brood*]: in *OE.*, in the act of brooding.

ABROOK, v. *ă-brook'* [AS. *a*, on; Eng. *brook* (see **BROOK** 3)]: in *OE.*, to bear; to brook; to put up with.

ABRUPT, a. *ăb-rŭpt'* [L. *abruptus*, broken off—from *ab*, *rŭptus*, broken—from *rumpo*, I break]: broken off; broken; steep; unconnected; sudden; unceremonious in words or acts; in *bot.*, looking as if a part were cut off. N. in *OE.*, broken steep ground. **ABRUPT'LY**, ad. *-lŭ*, with undue haste; hastily; ruggedly. **ABRUPTION**, n. *ăb-rŭp'shŭn*, a sudden and violent breaking off. **ABRUPT'NESS**, n. steepness; suddenness; unceremonious haste or vehemence.—**SYN.** of 'abrupt': rugged; rough; broken; hasty; sudden; unexpected; disconnected; blunt; unceremonious.

ABRUS, *ăb'rŭs*: a genus of plants of the natural order *Leguminosæ*, sub-order *Papilionaceæ*, of which the only known species, *A. precatorius*, is a shrub, originally belonging to India, where it is chiefly found in clayey soils, but now not uncommon in the West Indies and other tropical regions. The roots possess properties exactly similar to those of the common licorice. The seeds are nearly spherical, as large as small pease, of a scarlet color, with a black scar, and are familiar to most people in Britain, being used as beads. They are narcotic.

ABRUZZO, *ă-brót'sō*: a district of Italy; formerly the n.e. corner of the kingdom of Naples, and divided into three parts—Abruzzo Ulteriore I. and II., and Abruzzo Citeriore. These three divisions correspond to the present Italian provinces, Chieti, Teramo, and Aquila respectively. The whole district contains about 5,000 sq. m., and 1,300,000 inhabitants. Its chief towns are Chieti, Teramo, Aquila, Sulmona. It forms the wildest and loftiest portion of the Apennines. The streams are numerous, but the only river of any consequence is the Pescara, which flows into the Adriatic. The rent and jagged mountain-groups arrange themselves in picturesque shapes, reaching in Il Gran Sasso d'Italia, or 'the great rock of Italy,' which is the highest of the chain, the elevation of 9,800 ft. The highlands slope precipitously on all sides, but especially towards the n.e. shore. The climate of A. is raw in the higher regions; snow rests on the hills from October to April, and on some of the peaks all the year round; but the valleys are extremely fertile, though husbandry is in a wretched condition, and the low, open plains are left without the slightest protection from inundations of the rivers in spring, or means for irrigation in the arid summer. Dense forests of oak and fir clothe the sides of the mountains; at the base, almond, walnut, and other fruit-trees grow abundantly; olives in the deep-lying valleys. Fine cattle pasture in these regions; herds of swine roam through the lofty pine-woods; and the remoter fastnesses are the haunt of bears, wolves

ABSALOM—ABSCESS.

and boars. The chief importance of A. used to be its military position as a defense of the kingdom of Naples. There are few roads into it, so that it is very difficult for an enemy to reach Naples from the north. It is admirably suited for the purposes of guerilla warfare. But the people have ceased to possess a reputation as banditti. No trace of the old spirit which made their ancestors, the Marsi, Sabines, and Samnites, so terrible to the Romans, and which in modern times manifested itself in a love of petty plundering, is to be found. They have become a race of rude and simple shepherds, fondly attached to their mountain homes; musical, superstitious, and hospitable; but they are robust and powerful, and during the French invasion of Naples, 1799, displayed a vigorous courage in opposing the soldiers of the Revolution.

ABSALOM, *ăb'să-lôm*: third son of David, king of Israel, remarkable for his beauty and for his unnatural rebellion against his father. By popular acts he contrived to win the affections of the people, and then stirred up a formidable rebellion. The adherents of the king rallied round him, and a battle was fought in the forest of Ephraim, in which the rebels were defeated. In the flight, as A. was riding under a tree, his hair caught in the branches, and he was left suspended; in which position Joab, the commander of David's army, thrust him through, contrary to the king's express orders that he should be spared. The grief of David for his loss was excessive. See II. Sam. xviii.

ABSALON, Archbishop of Lund: see **AXEL**.

ABSCESS, *n. ăb'sēs* [L. *absces'sus*, gone away, departed—*from abs, cēdo*, I go: OF. *abscez*; F. *abcès*], or **APOSTEMA**: a gathering of humors into one mass in some part of the body; an accumulation of pus formed by disease within some tissue or organ of the body. The process by which an abscess is formed is the following: First, the capillary vessels become overcharged with blood, in consequence of inflammation. From the blood thus made stagnant, or flowing very feebly, a fluid exudes through the walls of the capillary vessels, and, containing a large portion of albumen, becomes pus or purulent matter. This matter, at first contained in the minute interstices of the tissues, gradually dissolves them, and so makes for itself a larger cavity; and frequently, by gradual dissolution of the adjacent parts, works its way either to the surface or to some natural cavity of the body. Pus thus makes its appearance often in a different part of the body from where it was formed. It also occurs that when the purulent matter does not find any outlet either naturally or artificially, it is gradually dried up or absorbed. In abscesses superficially seated—either in or close under the skin—the early treatment consists chiefly in promoting the formation of pus by the application of moist and warm bandages or poultices. The next step is the removal of the pus. When this is too long delayed, serious disturbance of the organ, or even poisoning of the blood, may ensue. An abscess must be regarded not as a distinct, original disease in itself, but as the result of another disease

ABSCIND—ABSENTEE.

—inflammation; or as an effort of nature for the removal of injurious matters from the system.

ABSCIND, *v.* *ăb-sĭnd'* [L. *absĭn'do*, I tear apart—from *ab*, *scindo*, I cut]: to cut off; to sever. **ABSCIND'ING**, *imp.* **ABSCIND'ED**, *pp.*

ABSCISS, *n.* *ăb-sĭs*, or **ABSCISSA**, *n.* *ăb-sĭs-să*—*plu.* **ABSCISSES**, or **ABSCIS'SÆ**, *-sĭs'ē* [L. *absĭs'sus*, torn or cut off—from *ab*, *scindo*, I cut]: a part cut off; a part of the diameter, or a segment of a conic section; the segment of a diameter included between its extremity and its intersection with an ordinate (see **PARABOLA**.) **ABSCISSION**, *n.* *ăb-sĭzh'ŭn*, a cutting off; sudden termination.

ABSCOND, *v.* *ăb-skōnd'* [L. *abscondĕrĕ*, to put out of sight—from *abs*, *condo*, I hide: OF. *absconder*, to conceal]: to conceal or hide one's self; to run away; to withdraw one's self in a private manner; to hide one's self, generally to elude the penalties of the law. **ABSCOND'ING**, *imp.* **ABSCOND'ED**, *pp.* **ABSCOND'ER**, *n.* one who runs away for concealment.

ABSENT, *v.* *ăb-sĕnt'* [F. *absent*—from L. *absens* or *absentem*, being absent or distant—from *abs*, *ens*, being]: to go away from; to keep away; to withdraw or retire from. **ABSENT**, *a.* *ăb'sĕnt*, not present; inattentive; at a distance. **ABSENT'ING**, *imp.* **ABSENT'ED**, *pp.* **ABSENT'ER**, *n.* one who takes himself away. **ABSENTEE**, *n.* *ăb'sĕn-tĕ'*, one who goes away from; one absent from duty without leave. **AB'SENTEE'ISM**, *n.* *-izm*, the practice of residing or stopping away from one's office or estate. **ABSENCE**, *n.* *ăb'sĕns* [F. *absence*; L. *absĕntĭa*]: the being away, or at a distance; want; in *law*, want of appearance; inattention of mind. **ABSENCE OF MIND**, the condition of one whose thoughts more or less habitually wander from present scenes or topics, often resulting in ludicrous or painful mistakes.—**SYN.** of 'absent in mind': abstracted; distracted; absorbed; engrossed; diverted.

ABSENTEE, *ăb'sĕn-tĕ'*: a term applied, sometimes by way of reproach, to capitalists who derive their income from one country, and spend it in another. It has been especially used in discussions on the social condition of Ireland. As long as Ireland had its own parliament, a great portion of the large landed proprietors lived chiefly in the country during summer, and passed their winters in Dublin; thus spending a large portion of their incomes among their dependents, or at least among their countrymen. The Union changed the habits of the Irish nobility and gentry, who were attracted to London as the political metropolis, or were induced, by the disturbed condition of Ireland, to choose residences on the continent. Such Irish landed proprietors were styled 'absentees;' and it was argued that their conduct was the great source of Irish poverty, as it drained the resources of the land, or, in other words, sent money out of Ireland. One class of political economists—among them M'Culloch—maintain that, economically viewed, absenteeism has no injurious effect on the country

ABSINTHE—ABSINTHIAN.

from which the absentee draws his revenue. An Irish landlord living in France, it is argued, receives his remittances of rent, not in bullion, but in bills of exchange; and bills of exchange represent, in the end, the value of British commodities imported into France. The remittance could not be made unless goods to the same amount were also drawn from Britain. Thus, although the landlord may consume, for the most part, French productions, he causes, indirectly, a demand for as much of British productions; and his income goes, in the end, to pay for them. His residence abroad, then, does no harm to the industry and resources of the country at large, although it is admitted that it may be felt as an evil in a particular locality. The truth of this doctrine, however, in its full extent, is disputed. Among other objections to it, it is argued that whatever may be true of the amount actually consumed, all the tradesmen and others who supply the absentee's wants have their profits, and have thus the means of accumulating; and that these accumulations, which are thus added to the national wealth of a foreign country, would have been added to the wealth of his native country had he been living at home. The result of the controversy seems to be that absenteeism does, to some extent, act injuriously on the wealth of a country, though it is not true that the whole revenues thus spent are so much clear loss, there being several indirect compensations.—On the evil of absenteeism, in a moral point of view, all are agreed; especially in a country in the condition of Ireland, where nearly the whole wealth is in the hands of extensive landed proprietors, with almost no middle class.

ABSINTHE, *ăb'sinth*: spirit flavored with the pounded leaves and flowering tops of certain species of *Artemisia* (q. v.), chiefly wormwood (*A. absinthium*), together with angelica-root, sweet-flag root, star-anise, and other aromatics. The aromatics are macerated for about eight days in alcohol, and then distilled, the result being an emerald-colored liquor. Adulteration is largely practiced, even blue vitriol being sometimes found in so-called A. The best A. is made in Switzerland, the chief seat of the manufacture being in the canton of Neuchâtel. It is chiefly used in France, but is of late largely exported to the United States. When to be drunk, the greenish liquor is usually mixed with water. The evil effects of drinking A. are very apparent; frequent intoxication or moderate but steady tipping, utterly deranges the digestive system, weakens the frame, induces horrible dreams and hallucinations, and may end in paralysis or in idiocy.

ABSINTHIAN, a. *ăb-sin'thî-ăn* [L. *absin'thîum*, wormwood]: of or like wormwood. **ABSINTHIAT'ED**, a. *-thî-ăt'ĕd*, impregnated with wormwood. **ABSINTHE**, n. *ăb'sinth* [F.]: a well-known French liqueur; an alcoholic liquor impregnated with the qualities of *absin'thîum* or wormwood. **ABSINTHIC**, a. *-thîk*, pert. to absinthium, or to an acid obtained from it. **ABSINTHINE**, n. *-thîn*, the bitter principle found in absinthium.

ABSOLUTE—ABSOLUTION.

ABSOLUTE, a. *äb'sō-lót* [L. *absolutus*, unfettered, unconditional—from *ab*, *solūtus*, loosened or set free—from *solvo*, I loose: F. *absolu*]: loosened or set free from control; without control; independent of any person or thing; despotic; positive; peremptory. **THE ABSOLUTE**, in mental philosophy, opposed to the conditioned; that which, complete in itself, stands in need of no relation to anything else. **ABSOLUTELY**, ad. *äb'sō-lót lī*, without restriction or limitation; peremptorily. **ABSOLUTISM**, n. *äb'sō-lót-izm*, state or principle of despotism. **AB'SOLUT'IST**, n. one who advocates absolutism. **AB'SOLUTE'NESS**, n. the state of being free from dependence or limits.—**SYN.** of 'absolute': despotic; arbitrary; tyrannical; positive; peremptory; certain; unconditional.

ABSOLUTE: opposed to *relative*, and means that the thing is considered in itself, and without reference to other things. In physics, we speak of the *absolute* velocity of a body—i.e., the rate of its motion through space; and of the *relative* velocity of two bodies—i.e., the rate at which they approach or recede from one another, one or both being in motion. In the language of modern metaphysics, the Absolute is the unconditioned, unalterable original—that which is the ultimate cause and ground of the phenomena of the visible world. Absolute, in politics, is applied to a ruler whose authority is unrestricted by constitutional checks.

ABSOLUTION, n. *äb'sō-lō'shūn* [F. *absolution*—from L. *absolūtōnem*, perfection, completion—from *solūtus*, loosened or set free]: a sentence of acquittal; a declaration of innocence; a remission of sin pronounced by the priest over the penitent who confesses. **ABSOLUTORY**, a. *äb-sōl'ū-tēr-ī*, that absolves. See **ABSOLVE**.

ABSOLUTION: originally a term of Roman law, signifying acquittal; now used in an ecclesiastical sense. In the primitive Christian Church, its form was this: Members that had given scandal by gross and open sins were excluded from the Lord's Supper, or from the congregation altogether, and could be readmitted only if they repented and underwent the penance laid upon them by the church. When they had done so, the presbyter, with the elders, pronounced the A. in presence of the congregation—meaning that the congregation forgave the offense, on their part, and received the sinner again into their number. Until the 3d c., the concurrence of the congregation continued to be necessary to A. But by the 4th c. it had become a right of bishops to absolve, and the public confession had gradually turned into a private confession before the priest, who now imposed the penance of himself, modified or remitted it, and then absolved. A. had, as yet, been extended mostly to open and gross sins; but when the fourth Lateran Council, 1215, had made auricular confession, at least once a year, obligatory, confession and its attendant A. were extended to all sins; and the A. was held to convey forgiveness both by the church and in the sight of God. The formula, *Deus or Christus absolvit te*, which was used till the

ABSOLVE—ABSORPTION.

12th c., was changed into *Ego absolvo te*; thus ascribing to the priest the power to forgive sins in the sight of God. This is the received theory of absolution in the Roman Catholic Church, sanctioned by the Council of Trent, and grounded on John xx., 21.—The Protestant churches differ in their views of A., some holding it only as declarative of the Divine promise of forgiveness on condition of repentance; others, as declarative of the Divine fact of forgiveness as already established; others, as in one or another sense, effectuate in making actual the Divine forgiveness. See CONFESSION: PENANCE.

ABSOLVE, v. *äb-zöl'v* [L. *absol'vērē*, to loose from some thing—from *ab*, *solvo*, I loose, I set free: Prov. *absolver*: F. *absoudre*]: to loose or set free from control; to release from some burden or penalty; to acquit; in *OE.*, to finish; to complete. **ABSOLVING**, imp. **ABSOLVED**, pp. *äb-zöl'v'd*. **ABSOLVER**, n. one who. **ABSOLVATORY**, a. *äb-zöl'v'ä-ter'i*, that contains absolution, pardon, or release.—**SYN.** of 'absolve': to acquit; exonerate; clear; exculpate; shrive.

ABSONANT, a. *äb-sö-nänt* [L. *absönans* or *absonan'tem*, discordant, harsh—from *ab*, *sönus*, sound; *sono*, I sound]: sounding discordantly; deviating from the true sound, tone, or harmony; absurd.

ABSORB, v. *äb-sörb'* [L. *absorbērē*, to swallow up—from *ab*, *sorbēō*, I drink up or suck in]: to drink in, as a sponge; to swallow or suck up; wholly to engage; to engross; to be absorbed. **ABSORB'ING**, imp. **ABSORBED**, pp. *äb-sörb'd*. **ABSORBENT**, a. *äb-sörb'ënt*, drinking in or sucking up; imbibing. **N.** that which sucks up or imbibes, or a vessel which imbibes or takes up. **ABSORB'ENTS**, n. plu. substances, such as magnesia and chalk, which remove acidity in the stomach. **ABSORBABLE**, a. *äb-sörb'ä-bl*, what may be sucked up. **ABSORBABILITY**, n. *äb-sörb'ä-bil'i-tä*, the capacity for being absorbable. **ABSORPTIVE**, a. *äb-sörp'tiv* [L. *absorptus*, sucked up]: having the power to suck up. **ABSORPTION**, n. *äb-sörp'shün* [F.—L.]: the act of drinking in or sucking up; the act or process of taking up digested and assimilated matter by absorbents. **ABSORBING GROUND**, in *paint*, the ground which has been prepared for a picture in oil-colors, and which, at sucking in the oils, imparts a strength and brilliancy to the colors.—**SYN.** of 'absorb': to swallow up; engulf; engross; imbibe.

ABSORBENTS: see **LACTEALS** and **LYMPHATICS**.

ABSORPTION, *äb sörp'shün*, in Botany: it is believed that plants absorb carbonic acid gas, and also to some extent fluids, by their leaves and other aerial organs; and it is supposed that this absorption takes place principally through the *stomata* of the leaves (see **LEAVES**), and both by the upper and under surface of the leaf, in some plants by both surfaces indifferently, in others much more powerfully by the one surface or the other. But plants depend principally upon their roots for nourishment, and it is at the extremities of their fibrils that absorption takes place most rapidly, according to a peculiar process to which has been given the name of **ENDOSMOSE** (q.v.).

ABSTAIN—ABSTRACT.

ABSTAIN, v. *äb-stän'* [L. *abstīnērē*, to hold or keep away from—from *abs*, *tenēō*, I hold: F. *abstenir*: Sp. *abstenerse*: Norm. F. *abstiegnier*]: to hold or keep away from, as from an object of desire; to keep or refrain from; to forbear. **ABSTAIN'ING**, imp. **ABSTAINED**, pp. *äb ständ'*. **ABSTAIN'ER**, n. one who keeps from. **ABSTENTION**, n. *äb-stēn'shūn* [F. *abstention*: L. *abs*, *tēntus*, held]: the act of holding off or abstaining. **ABSTINENCE**, n. *äb'stīn-ēns* [F. *abstinence*: L. *abstīnēntia*]: the practice of keeping from, especially from certain kinds of food or drink. **AB'STINENT**, a *-ēnt* [F. *abstinēt*: L. *abstinens*]: refraining from, especially in the use of food or drink; temperate. **AB'STINENT'LY**, ad. *-lī*.—**SYN.** of 'abstain': to forbear; refrain; give up; relinquish; withhold;—of 'abstinent': sober; abstemious; temperate; moderate.

ABSTEMIOUS, a. *äb-stē'mī-ūs* [L. *abstēmīus*, temperate or sober—from *abs*, *tēmētum*, an intoxicating liquor, as wine—*līl.*, not being wet or moistened with wine]: sparing in the use of food or strong drinks; temperate; holding back from excess or too much pleasure. **ABSTE'MIOUSLY**, ad. *-lī*. **ABSTE'MIOUSNESS**, n. being sparing in the use of food or strong drink.

ABSTENTION, **ABSTINENCE**, **ABSTINENT**, ETC.: see under **ABSTAIN**.

ABSTERGENT, a. *äb-stēr'jēnt* [F. *abstergent*—from L. *abster gens*, wiping dry—from *abs*, *tergēō*, I rub off]: having a cleansing property—thus fuller's earth is an abstergent. **ABSTERSIVE**, a. *äb-stēr'siv* [mid. L. *abstersivūs*; F. *abstersif*, useful to clean]: cleansing.

ABSTINENCE: see **ABSTAIN**: **FASTING**.

ABSTINENCE SOCIETIES, *äb'stīn-ēns*: associations for the promotion of abstinence from all kinds of alcoholic liquors. See **TOTAL ABSTINENCE**.

ABSTRACT, a. *äb'strākt* [L. *abstrāctus*, drawn or dragged away from—from *abs*, *tractus*, drawn—from *trāho*, I draw: F. *abstraire*, to abstract—*līl.*, drawn away from something]: apart or separate from something else; existing in the mind only, as opposed to *concrete*; difficult; abstruse. N. a summary or epitome; an abridgment. V. *äb'strākt'*, to separate; to mentally separate only one part or quality of an object; to epitomize; to purloin. **ABSTRACT'ING**, imp. **ABSTRACT'ED**, pp. separated; absent in mind. **ABSTRACT'EDLY**, ad. **ABSTRACT'EDNESS**, n. state of being separated from a real existence. **ABSTRACT'ER**, n. one who. **ABSTRACTION**, n. *äb-strāk'shūn* [F.—L.]: the act of the mind when considering some part or property of a body by itself, as *hardness*; absence of mind; deep thought; purloining. **AB'STRACTNESS**, n. being in a separate state; not being connected with any object. **ABSTRACT'IVE**, a. *-tīv*, having the power to abstract. **ABSTRACT'IVELY**, ad. *-tīv-lī*, taken as an abstraction. **ABSTRACTLY**, ad. *äb-strākt'lī*, in an abstract manner. **ABSTRACT NAME**, a name standing for an attribute, or a quality of a thing—as opposed to *con-*

ABSTRACTION—ABSURD.

crete name, a name which stands for a thing. **ABSTRACT IDEA**, an idea separated from other accompanying ideas. **ABSTRACT NUMBERS**, numbers used without application to things, 2, 3, 6. **CONCRETE NUMBERS** are such as 2 lb., 3 oz., 6 doz.—**SYN.** of 'abstract, v.': to separate; draw off; distinguish;—of 'abstract, n.': epitome; abridgment; compendium; synopsis.

ABSTRACTION, *ăb-străk'shŭn*: that intellectual process by which the mind withdraws (*abstraho*) some of the attributes of objects from the others, and thinks of them to the exclusion of the rest. The abstract is opposed to the concrete. John, William, my brother, form concrete images in my mind, each with a multitude of attributes peculiar to himself. But they have also certain attributes common to them and to all individuals of the race; I can overlook the other attributes and attend to these, and thus form a notion or conception, which is called a *man*. Man is, therefore, an abstract notion, the word connoting, as it is called, a certain though not very well defined number of attributes. With the exception of proper names, all nouns are thus abstract. There are degrees, however, in abstraction. The abstract notion *animal* rises above that of *man*, embracing all men and innumerable organized beings besides. An *organized being*, again, is a still higher stage, and embraces both animals and plants. Being, time, space, are among the highest abstractions. The higher abstractions rise, the fewer attributes are implied or connoted in the name; hence the propriety of the phrase, *empty* abstractions. On the other hand, the number of objects to which the name is applicable increases; and thus reasoning in abstract terms has the advantage of being general or extensive in its application. But such reasoning is apt to become vague and fallacious, unless constant regard is had to concrete instances. Abstract language is best adapted for scientific exposition; concrete, for graphic and poetical effect.

ABSTRICED, a. *ăb-strîkt'ĕd* [L. *ab, strictus*, drawn tight]: unbound.

ABSTRINGE, v. *ăb-strînj'* [L. *abstringĕrĕ*—from *ab, stringo*, I bind or tie tight]: to unbind. **ABSTRIN'GING**, imp. **ABSTRINGED**, pp. *ăb-strînjd'*.

ABSTRUSE, a. *ăb-strôs'* [L. *abstrŭsus*, thrust away from one, hidden—from *abs, trŭdo*, I thrust]: thrust away from one's sight; concealed; difficult to be understood; obscure in meaning. **ABSTRUSE'LY**, ad. *-lĭ*, in an abstruse or hidden manner. **ABSTRUSENESS**, n. *ăb-strôs'nĕs*, darkness in meaning; obscurity.—**SYN.** of 'abstruse': recondite; obscure; curious.

ABSURD, a. *ăb-sĕrd'* [L. *absur'dus*, irrational—from *ab, surdus*, deaf, that will not hear]: not agreeable to the ears, or not fit to be heard; not agreeable to reason or common sense; what is plainly opposite to the truth; contemptibly foolish. **ABSURD'LY**, ad. *-lĭ*. **ABSURD'ITY**, n. *-dĭ-tĭ*, what is absurd; that which is not in accordance with reason or common-sense. Also **ABSURD'NESS**, n.—**SYN.** of 'absurd': foolish;

ABSURDUM—ABULFARAJ.

irrational; preposterous; incongruous; inconsistent; ridiculous; nonsensical.

ABSURDUM, REDUCTIO AD: the method of proving a truth by showing that to suppose the proposition untrue would lead to a contradiction or absurdity.

ABSINTHIUM: see WORMWOOD.

ABU, á'bó: mountain of India, in the territory of Serolie, Rajpootana, rising far above any other of the Aravulli ridge, and said to be about 5,000 ft. above the sea. The base is broad, its circuit being estimated at forty or fifty m.; the summit is very irregular, and divided into many peaks. It is a celebrated place of pilgrimage, especially for the Jainas, who have a magnificent group of four temples at Dilwara, about the middle of the mountain, one of which is described as 'the most superb of all the temples in India.' Before it is an equestrian statue of the founder, Bimul Sah, a Jain merchant of Anbulwara. All the temples exhibit symptoms of decay. The summit of A. is about 40 m. n.e. from the British cantonment of Deesa, and it has lately begun to be used as a sanatorium.

ABU, or BU (Arab. for 'father'): prefixed to many Arabic proper names, as the equivalent syllable *Ab* is prefixed to Hebrew names: e.g., *Abu-bekr*, 'Father of the virgin' (*Ayeshah*). But *Abu*, like *Ab*, often signifies merely possessor; as in *Abulfeda* (possessor of fidelity), 'the Trusty'; *Abner*, 'the Brilliant'—literally, 'father or possessor of light.'

ABU-BEKR, á'bó-běk'r ('Father of the virgin' *Ayeshah*, the wife of Mohammed): 572–635: a man of great influence in the Koreish tribe, who, in 632, when Mohammed died, was made the first caliph or successor of the Prophet. After defeating his enemies in Arabia, and warring successfully against Babylonia, Syria, and the Byzantine emperor Heraclius, A. died, and was buried at Medina, near the remains of Mohammed and his wife *Ayeshah* (q.v.).

ABULFARAJ, á'ból-fá'ráj (Lat. *Abulfaragius*), called also *Barhebræus*—i.e., Son of the Hebrew, as being by birth a Jew, though afterwards a Christian: 1226–86; b. Malatia, in Armenia: so distinguished for knowledge of the Syriac, Arabic, and Greek languages, and of philosophy, theology, and medicine, that he was called the phoenix of the age. At the age of twenty he was made bishop of Gula, and afterwards of Aleppo; and rose to the rank of maphrian, the highest dignity among the Jacobite Christians next to patriarch. Of his numerous Syriac and Arabic writings, most of which lie buried in the library of the Vatican, the best known is a *Chronicle*, in Syriac, of universal history from Adam down to his own time. The first part of it was published at Leipzig, 1789, the rest (3 vols.) at Louvain, 1872–74. A. himself abridged this work in Arabic, under the title of *History of the Dynasties* (edited by Pococke, Arab. and Lat. Oxf. 1663). Among his theological writings may be mentioned his *Magazine of Mysteries*, a Commentary on the Syriac Version of the Bible.

ABULFEDA—ABUT.

ABULFEDA, *â-bûl-fêd'â*: 1273-1331; b. Damascus: a Moslem prince, known as a writer of history. During his youth he distinguished himself in several campaigns against the Christian kingdom founded by the Crusaders. From 1310 till his death, he ruled the principality of Hamat, in Syria, and was a true ally of the sultan. A. visited Egypt and Arabia, patronized literature and science, and left several important works in Arabic, among which are his *Annals*, the earlier portion of which has been edited by Fleischer, under the title of *Historia Anteislamica* (Leip. 1831), and the rest by Reiske, in the *Annales Moslemici* (Copenh. 1789-94). This work was in great part compiled by A. from earlier Arabic authors, and is a valuable source of history, especially of the Arabic Empire. He also wrote a geography, which has been edited with a French translation, by Reinaud and De Slane (Par. 1848), and by Reiske (Dresden, 1842).

ABUNDANCE, ABUNDANT, ETC.: see under **ABOUND**

ABUSE, v. *â-bûz'* [F. *abus*, misuse; *abuser*, to misuse, to deceive—from L. *abusus*, misused, abused—from *ab*, *usus*, used]: to use improperly; to treat wrongly or ill; to misuse anything; to violate, to revile; in *OE.*, to deceive; to impose on. N. *â-bûs'*, ill use of anything; rude reproach; misapplication. **ABUS'ING**, imp. **ABUSED**, pp. *â-bûz'd'*. **ABU'SER**, n. *-zér*, one who. **ABUSE'FUL**, a. full of abuse. **ABUSIVE**, a. *â-bû'siv*, employing bad language; treating ill; reviling; containing abuse. **ABU'SIVELY**, ad. *-lî*, in the manner of abuse; by an improper or wrong use. **ABU'SIVENESS**, n. the quality of being abusive; rudeness or foulness of language.—**SYN.** of 'abuse, v.': to misuse; revile; vilify; reproach; deceive; injure; maltreat;—of 'abuse, n.': invective; reproach; insult; scurrility; opprobrium; contumely;—of 'abusive': scurrilous; offensive; reviling; opprobrious; insulting; insolent; injurious.

ABUSHEHR, *â-bô-shêr'* (variously written Bushehr, Bushire, in Pers. Bendershehr): seaport on the e. coast of the Persian Gulf, at the extremity of a peninsula. The district is liable to be devastated by earthquakes and the simoom, and is deficient in water; but the situation is so favorable for commerce that the trade is valued at \$3,000,000 a year, of which three-fourths represent imports. It is the land terminus of the Indo-European telegraph line; the headquarters of the English naval squadron in the Persian Gulf, and a chief station of the British Indian Steam Navigation Co. The exports are horses, fruits, shawls, pearls, silk, rosewater, asafoetida, copper, gall-nuts, etc.; imports, sugar, indigo, iron, cotton goods, etc. Pop. nearly 20,000.

ABUT, v. *â-bût'* [F. *aboutir*, to meet at the end: *OF.* *botter*, to strike: F. *bout*, end. Eng. *butt*, to strike with the head, as a goat: Mid. L. *abutto*, I terminate or bound]: to border upon, particularly at the end; to touch; to be contiguous. **ABUT'ING**, imp. **ADJ.** facing each other and contiguous. **ABUT'TED**, pp. **ABUTTALS**, n. plu. *â-bût'âls*, the buttings or boundaries of lands, particularly at the ends—the sides or the breadth of lands are properly adja-

ABUTILON—ABYSS.

cent or bordering, and the ends in their length abutting or bounding. **ABUTMENT**, n. *ă-bŭt'měnt*, that which borders upon; what supports the end of a bridge. **ABUT'TER**, n. that which abuts.

ABUTILON, n. *ă-bŭ'til-ŏn* [F. *abutilon*, a marsh-mallow]: a genus of Malvaceæ, or the mallow family, annual or shrubby plants, some favorite garden plants, have heart-shaped leaves, and axillary pendulous flowers.

ABUTMENT, *ă-bŭt'měnt*, in Architecture: the part of a pier or wall from which an arch springs, and which resists the outward thrust. The term *impost* is used when the arch is a semicircle, so that the pressure is vertical. In reference to a bridge, the abutments are the walls adjoining the land, which support the ends of the roadway, or the extremities of the arch or arches.

ABY, **ABUY**, or **ABIE**, v. *ă-bī'* [AS. *abyrgan*, to redeem, to pay the purchase-money—from *a*, intensive; *byrgan*, to buy: Scot. *aby*; OE. *abeye*, to suffer for—see **ABIDE**]: in Scot. and OE., to pay the penalty; to suffer the consequences of anything. **ABUY'ING**, imp. paying the penalty.

ABYDOS, *a-bī'dos*: a town in Asia Minor, at the narrowest part of the Hellespont, opposite Sestos. It is celebrated as the place whence Xerxes and his vast army passed into Europe, B.C. 480; also as the scene of the story of Hero (q.v.) and Leander. In the later antiquity, the people of A. were reproached for their effeminate and dissolute manners.

ABYDOS, in Upper Egypt (Thebais): a town on the left bank of the Nile, and on the main route of commerce with Libya. Even in the time of Strabo, this town was in ruins. Here the remains of the Memnonium, and of a temple of Osiris are still remarkable. In the former, W. J. Bankes, 1818, discovered the celebrated Tablet of A., bearing in hieroglyphics, a genealogy of the eighteenth dynasty of the Pharaohs. It is now in Paris, and copies have been published.

ABYSS, n. *ă-bīs'* [Gr. *abus'sos*, without a bottom—from *a*, without; *bussos*, a bottom]: that which is bottomless; a very deep place; a deep mass of waters; a gulf. **ABYSSMAL**, a. *ă-biz'māl*, pert. to the greatest depths; deep as an abyss; unending. **ABYSSM**, n. *ă-bīzm'* [OF. *abisme*; Sp. *abismo*—from mid. L. *abyssimus*, the deepest depth]: an abyss.

ABYSSINIA.

ABYSSINIA, *āb-ī-sin'ī-a*, called **Habesh** by the Arabs: the large tract of highlands in the e. of Africa. From the Red Sea on the n.e., it rises in terraces towards the s.w. Between the highlands and the Red Sea lies a flat tract called **Adal**, narrow at the n. (lat. 15° 30'), and widening to the s. The plains of Nubia and Kordofan form the boundaries on the n. and w., while the s. limits are not well known; about 200,000 sq. m.; pop. 3,000,000 to 4,000,000. The country consists of high table-lands, intersected by deep ravines formed by the rivers, and steep sandstone terraces. Numerous mountain-chains, mostly of volcanic origin, rise above the table-lands; the highest are the mountains of **Samen** or **Samien**, rising to about 15,000 ft. above the sea-level. Some of the plains have an elevation of 7,000 to 10,000 ft. A. gives rise to numerous rivers, the largest of which are the **Abai** or **Nile** (**Bahr-el-Azrek** or **Blue River**), and the **Tak-kazie**, an affluent of the Nile. In the s. is the **Hawash**—from which the country takes its name—which flows e. into the salt-lake of **Assal** in **Adal**. The largest lake is that of **Tzana** or **Dembea**, through which the **Abai** or **Blue Nile** flows. The climate in the elevated tracts of Abyssinia is temperate and salubrious; in the low tracts along the coast, and in the n. and n.w., the heat is excessive, and the climate noxious. On the whole, A. is a country of great fertility; but, like the climate, the productions of the soil vary greatly with the different degrees of elevation. Wheat and barley are cultivated, also maize, the grains called **Teff** (*Poa Abyssinica*), and **Tocusso** (*Eleusine Tocusso*), various leguminous plants, cotton, coffee, sugar-cane, tobacco, etc. The coffee-plant grows wild. Among wild animals, the lion, leopard, hyena, wolf, jackal, elephant, buffalo, rhinoceros, and zebra are found.

The people of A. belong mostly to the Semitic race, and resemble the Arabs both in physical characteristics and structure of language. See **ETHIOPIA**. The ethnology of the country is variously given by different authorities. According to **Rüppell**, there are three principal races. The aboriginal Abyssinians, inhabiting the greater part of **Amhara**, numerous also in **Tigré**, are of middle size, with oval faces, lips not thicker than those of Europeans, pointed noses, and straight or slightly curled hair. In this race he includes the **Falashas**, or **Jews**, the **Gamant**, and the **Agows**. A second race, abounding most in the n. of **Tigré**, have thick lips, noses blunt and somewhat curved, and thick hair, verging on wooliness. The third are the **Gallas**, inhabiting the s. of **Shoa** and the regions w. of **Lake Dembea** and the **Abai**; a large-bodied race, round-faced, short-nosed, with a depression between the nose and brow, deep-set lively eyes, and thickish lips. The color of these races is brown of various shades. The only negroes in A. are slaves from the country of the **Shangallas** to the w.

The oldest accounts of the Abyssinians are full of fables, but seem sufficient to prove that they attained some civilization even in remote antiquity. Christianity was introduced about the middle of the 4th c., and soon prevailed extensively. **Axum** was at that time the capital. Two centuries

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later, the Abyssinians were powerful enough to invade Arabia, and conquer a part of Yemen. In the subsequent struggles against the invading Moslem, the coast-land Samhara and the country of Adal were lost. In the 10th c., a Jewish princess overthrew the reigning dynasty, the surviving representative of which fled to Shoa. After three centuries of confusion, the empire was restored under Icon Amalach, and some progress was made in improvement. Early in the 15th c., the Abyssinians entered into close relations with the Portuguese, by whose assistance the empire was saved, in 1540, from falling into the hands of the invader Granic, sultan of Adal. The southern provinces, however, were lost, and the seat of empire was removed from Shoa to Gondar. Under the influence of the Portuguese missionaries, the royal family adopted the Roman Catholic faith; and the old Coptic Church was formally united to the see of Rome. The people and ecclesiastics obstinately resisted the innovation; the emperor gave way; and ultimately, 1632, the Romish priests were expelled or put to death. In consequence of the commotions thus excited, the monarchical power declined, while that of the governors of provinces greatly increased, and, indeed, became almost absolute. For the later history of A., see THEODORE. The political divisions of the country are subject to continual alteration; but the following are the most important:—1. The kingdom of *Tigré*, extending between the river Takkazie or Bahr-el-Aswad (Black River), and the mountains of Samen on one side, and the district of Samhara on the other. Its chief towns are Antalo and Adowa. 2. The kingdom of *Gondar* or *Amhara*, extending on the w. of the Takkazie and the Samen mountains. The capital, Gondar, is situated in the n.e. of the plain of Dembea or Gondar, at an elevation of 7,420 ft. 3. The kingdom of *Shoa* (including *Efat*), lying s. of Amhara, and separated from the Galla tribes by the Hawash. This is, by all accounts, the best organized and most powerful state now in A. The capital, Ankobar, at an elevation of 8,198 ft., has 8,000 to 10,000 inhabitants, and enjoys a delightful climate. The Gallas, a savage but enterprising race, effected a settlement in the s. of A. in the 16th c. They inhabit the whole of the eastern part of tropical Africa. Several of their tribes have been modified in character and customs by conversion to Mohammedanism, and have founded kingdoms—such as *Enarea*, one of the highest mountain countries of Africa, and rich in produce; *Kusha*, on the river Goshob, where the slave-trade is actively carried on by the Portuguese; and several smaller independent states of which little is known.

In consequence of invasions and civil warfare, the present social and political condition of A. is very unfavorable. The kingdom of Shoa is in better circumstances than the other states. Though Christianity is still the professed religion of the majority of Abyssinians, it exists among them only in its lowest form, and is little more than ceremonial. Their church is national and independent, but the visible head, or *Abuna* ('our father') is ordained by the Coptic patriarch of Alexandria. The doctrines of the Abyssinian co-

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incide with those of the Coptic Church, especially in the monophysite heresy; but several peculiar rites are observed, including circumcision of both sexes, and observance of the Mosaic laws respecting food, etc.; love-feasts, and adult baptism. The oldest Abyssinian churches are hewn out of rocks. The modern churches are mostly small, round, or conical buildings, thatched with straw, and surrounded by pillars of cedar. Statues and bass-reliefs are not tolerated in churches, but paintings are numerous. The state of manners and morals in A. is as low as might be looked for in a country so long a prey to anarchy and violence. Human life is lightly valued, the administration of justice is barbarously negligent and corrupt, and the marriage-bond is tied and loosed with extreme facility. The land generally yields at least two crops annually; but the agriculture is miserable, and the condition of the lower classes proportionally wretched. Among fruits, the fig is the most plentiful. Wine is used only for the Eucharist; the common drink is *bouza*, a kind of sour beer, made from the fermentation of bread. The manufactures of A. are rude, but sufficient, with a few exceptions, for the wants of the natives; cotton stuffs and leather goods are the staple articles. The foreign trade is carried on principally through Massowah; the chief exports being slaves, gold, butter, musk-horns, wax, and ivory.

A. has recently become better known to us through the visits of missionaries, scientific travellers, etc., and the British Expedition of 1867, 8. See the *Travels and Journals of Bruce, Lord Valentia, Salt, Ritter, Gobat, Isenberg and Krapf, Ruppell, Parkyns, Plowden, Markham, and Blandford*; the *Report of the French Scientific Commission (1845)*; *Contributions of MM. d'Abbadie to Journ. Asiat.*, and of Beke and Kirk in *Journ. of Roy. Geogr. Soc.*; *Record of the Expedition to A.*, by Major Holland and Captain Hozier. See THEODORE.

ABYSSINIAN, a. *äb'î-sîn'î-an*, of or pert. to Abyssinia.

AC, *äk*, a Latin prefix, a form of *ad*, meaning *to*; the forms of *ad*, meaning *to*, are *a*, *ac*, *af*, *ag*, *al*, *an*, *ap*, *ar*, *as*, *at*, so varied for the sake of euphony, according to the commencing letter of the part of the word of which it forms the prefix.

ACACIA.

ACACIA, n. *ä-kä'shī-ä* [L. *acaciā*; Gr. *akākīā*, a thorn]: genus of plants of the natural order *Leguminosæ*, sub-order *Mimoseæ*.



Acacia Arabica (Gum-arabic Tree).

The genus *A.* differs from *Mimosa* in the greater number of its stamens (10—200), and in the want of transverse partitions in its bivalvular legumes. The acacias are diffused over all quarters of the globe except Europe. The greater number of them have a singular appearance, because of the leaf-stalks spreading out in a leaf-like form (*phyllodium*); while the leaflets are more or less stunted in appearance, and frequently are altogether absent. Other species have bipinnate leaves, with a great number of leaflets, and are extremely beautiful. Many are of great importance in an economical point of view, because of the juice which flows from them, which, when inspissated, becomes an article of commerce under the name of Gum (q. v.). The species called *A. gummifera*, *A. Seyal*, *A. Ehrenbergii*, *A. tortilis*, *A. Nilotica*, and *A. vera*, natives of Africa, produce gum-arabic, also *A. speciosa* and *A. Arabica*, natives of the south of Asia. *A. Arabica* is called the Babul-tree in India, and its gum, babul. A gum similar to gum-arabic is produced by *A. decurrens*, *A. mollissima* (the Silver Wattle), and *A. affinis* (the Black Wattle), in New Holland, and by *A. karroo*, at the Cape of Good Hope. Gum Senegal is the produce of *A. Verek* and *A. Adansonii*, natives of the western coast of Africa. Yet *A. Verek* is also said to yield true white gum-arabic. Catechu (q. v.) is obtained from the wood of *A. catechu*. The astringent bark and pods of some species are used for tanning. The bark of *A. Arabica* is administered in India as a powerful tonic medicine. The pods of *A. concinna* form an article of commerce in India, its seeds being saponaceous and used in washing. A decoction of the pods of *A. Arabica* is sometimes used in the same way. A considerable number of species afford useful timber. The flowers of many species are fragrant. A number of species from New Holland and other countries have been introduced into the s. of Europe. Some are of frequent occurrence in green-houses in Britain; and a few of the Australian species succeed tolerably in the open air in the s. of England. The foliage of the acacias with bipinnate leaves shows a peculiar sensitiveness to changes of weather; when a thick cloud obscures the sun, the opposite leaflets close together, and so remain till the sun reappears. The Locust-tree of North America (*Robinia pseud acacia*) is often called *A.* both in Britain and upon the continent of Europe. Other species of *Robinia* also receive the same name. See LOCUST-TREE and ROSE A. *Flores Acaciæ* (*A. Flowers*) is an old medical name for Sloe flowers.

ACADEMY.

ACADEMY, n. *ă-kăd'ĕ-mĭ* [F. *académie*—from L. *Acadēmia*; Gr. *Akadēmĭa*, at Athens, name of a garden or grove where Plato taught in ancient times]: a public or private school; a society of learned men. **ACADEMIC** or **ACADEMICAL**, a. *ăk'ă-dēm'ik* or *ăk'ă-dēm'ĭ-kul*, pert. to a college or university. **ACADEMICALLY**, ad. *-lĭ*. **ACADEMICIAN**, n. *ă-kăd'ĕ-mĭsh'ăn*, or **ACADEMIAN**, n. a member of a university or learned society. Also **ACADEMIST**, n.

ACADEMY: a name originally applied to the philosophical school of Plato, derived from the place in which that philosopher was accustomed to meet and converse with his pupils. This was a garden or grove in the suburbs of Athens, said to have once belonged to the hero Academus, and by him to have been presented to the citizens for a gymnasium. The spot is at this day known under the name of *Akadimia*. The variations of doctrine among the successors of Plato gave rise to the distinctive titles of *Old*, *Middle*, and *New A*. The first is applied to the philosophic teaching of Plato himself and his immediate followers; the second, to that modification of the Platonic philosophy taught by Arcesilaus (q.v.); and the third, to the half-skeptical school founded by Carneades (q.v.).

In its common English acceptation, the word academy is loosely applied to any species of school which professes to communicate more than the mere elements of instruction. This, however, though perhaps more in affinity with the original application of the term, must be regarded as an abuse of its more general and strict acceptation in modern usage, as signifying a society of savans or artists, established for the promotion of literature, science, or art. The first institution in ancient times that seems to merit the name, in this sense, of academy, was the celebrated *Museum* founded at Alexandria B.C. 3d c., by Ptolemy Soter, which concentrated in that intellectual capital all that was most eminent in science, philosophy, poetry, and criticism. After this model the Jews, and, at a later period, the Arabians, founded numerous institutions for the promotion of learning. During the middle ages, with the exception of the Moorish institutions at Granada and Cordova, in which poetry and music formed prominent subjects of study, we find nothing corresponding to the modern idea of an academy save the learned society established by Charlemagne in his palace, at the suggestion of his teacher Alcuin. This association was dissolved by the monarch's death; and not till the middle of the 15th c., when the conquest of Constantinople drove many learned Greeks to seek asylum in Italy, do we find trace of a similar institution. Under the enlightened patronage of Lorenzo and Cosmo de' Medici, the lovers of Greek learning and philosophy were united in the bond of a common pursuit, and zealously labored to revive the long extinguished light of classic literature. After the decline of the Greek and Platonic Academies of Florence there arose institutions of a more comprehensive character, the example of which spread from Italy throughout all the states of Europe.

Academies may be divided into those established for

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general ends, and such as contemplate specific objects. The members are usually classified as *Ordinary*, *Honorary*, and *Corresponding*. The results of their labors in their various departments are reported at the periodic meetings, and printed in the records of the academy. Prizes are generally established as the rewards of distinguished merit in original discovery, or excellence in the treatment of subjects proposed for competition. Among general academies, deserving of mention in the first place is the *A. of Sciences*, at Paris, established by Colbert, 1666, now a branch of the *Institut de France*. See INSTITUTE. The first scientific academy founded in modern times was the *Academia Secretorum Naturæ*, established at Naples, 1560, afterwards put down by a papal interdict. It was succeeded by the *A. of the Lincei*, founded at Rome by Prince Ceci, which attained distinguished success. Galileo was one of its members. Subsequently arose the *A. del Cimento*, at Florence, and the *A. degl' Inquieti*, of Bologna, afterwards incorporated into the *Accad. della Traccia*, and finally, 1711, merged in the Institute of Bologna, or Clementine *A.*—The *Berlin A. of Arts and Sciences*, founded, 1700, by Frederick I., was, 1710, divided into four sections: 1. Physics, Medicine, and Chemistry; 2. Mathematics, Astronomy, and Mechanics; 3. German Language and History; 4. Oriental Literature, in special connection with missions. The first president was Leibnitz, whose extraordinary versatility of genius qualified him for a leading place in all its departments. Under the Great Frederick, new life was infused into the academy by the encouragement offered to learned men of all countries to settle at Berlin. Maupertuis was now appointed president, and the academy was reorganized under the four classes of Physics, Mathematics, Philosophy, History and Philology. The public meetings are held twice a year. The transactions did not appear regularly till after 1811. They were formerly published in French, but are now in German. The *Imperial A. of Sciences of St. Petersburg* was planned, 1724, by Peter the Great, with the advice of Leibnitz and Wolf. It was established in the following year by Catherine I., and liberally supported by the empress; fifteen members received pensions as professors of various branches. Of these were Wolf, Bülfinger, Nicolas and Daniel Bernouilli, and the two De Lisles. After various fluctuations, the academy attained eminence and utility under the patronage of Catherine II. Among the most important results of her liberality are the travels and researches of such men as Pallas and Klaproth. The academy is still composed of fifteen salaried members, besides a president and director, and four pensioned supernumeraries, who attend the meetings and succeed to the vacant chairs. It possesses an extensive library and a very valuable museum. The first series of its transactions (1725–47) bears the name of *Commentarii*; the second (1748–77), of *Novi Commentarii*; the third (1777–82), of *Acta*. Before this date they were written in Latin; thenceforth in Latin or French. From 1783 to 1795 they are called *Nova Acta*; from that time to the present, *Memoirs*.—The *A. of Sciences at Stockholm*, founded 1739,

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consisted at first of six members, one of whom was the celebrated Linnaeus. It received a royal charter 1741, but no endowment. Its publications since 1779 are distinguished as *New Transactions*. Papers on agriculture are separately published, under the title of *Oeconomica Acta*. In 1799 it was divided into six classes: 1. Political and Rural Economy, 15 members; 2. Commerce and Mechanical Arts, 15; 3. Swedish Physics and Natural History, 15; 4. Foreign Physics and Natural History, 15; 5. Mathematics, 18; 6. History, Philology, and Fine Arts, 12. The resident members preside in rotation, during a term of three months: the transactions appear quarterly. At the annual meeting in April, prizes are distributed.—The *Royal A. of Sciences at Copenhagen* owes its origin, like the last-mentioned, to six learned men, employed by Christian VI. in 1742 to arrange his cabinet of medals. In 1743 the king, on the recommendation of Count Holstein, their first president, took the academy under his protection, endowed it, and ordered that natural history, physics, and mathematics should be embraced within the sphere of its operations, at first limited to the national history and antiquities. The academy's transactions are in Danish; some of them are translated into Latin.—The *A. of Sciences of Mannheim* was founded, 1755, by the Elector-palatine Karl Theodor, and divided into the sections of History and Physical Science; the latter was subdivided in 1780 into Physics proper and Meteorology. The transactions under the two former heads are published under the title of *Acta*; the meteorological memoirs are entitled *Ephemerides*.—The *A. of Sciences of Munich* was founded, 1759. Soon after the erection of Bavaria into a kingdom, it was reorganized on a very extensive footing, under the presidency of Jacobi. Its memoirs are published under the title of *Abhandlungen der Baierischen Akademie*.—The *A. of Lisbon*, established by Queen Maria 1779, numbers 60 members; viz., 24 ordinary, and 36 honorary and foreign; and is divided into three sections: 1. Natural Science; 2. Mathematics; 3. Portuguese Literature. It is liberally endowed by government, and has a library, museum, observatory, and printing-office. Its *Memorias* have appeared since 1787.—The *Royal Irish A.* dates its origin from 1782, when a number of gentlemen, chiefly connected with the university of Dublin, associated themselves for the pursuit of science, history, and literature. The plan of the society was afterwards extended. The first volume of its transactions appeared, 1788.—The *American A. of Arts and Sciences* was established at Boston, 1780: it had previously existed in another form, the original institution being due to Franklin. The first volume of its transactions was published in 1785.—The *A. of Sciences at Vienna* was founded 1846. It is divided into the sections of History and Philology; Mathematics and Natural Science; Philosophy, Political Economy, and Medicine. It has published *Reports* of its meetings since 1848, and since 1850, *Memoirs*.

Among the academies established for the cultivation of particular departments of knowledge are the following:—1. **LANGUAGES.** The *Accademia della Crusca*, or *Accademia Fur-*

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furatorum, was founded at Florence, 1582, chiefly for the purpose of promoting the purity of the Italian language; whence its somewhat fantastic designation—*crusca* signifying chaff or bran. It first drew attention by its attacks on Tasso. Its principal service has been the compilation of an excellent dictionary, and the publication of correct editions of the older Italian poets. A new edition of this dictionary is at present in preparation, but from the slow rate of its progress it is calculated that many centuries must elapse before its completion. For an account of the *Académie Française*, instituted, 1629, as a private society, see INSTITUTE. The *Royal Spanish A.* was founded at Madrid, 1714, by the Duke of Escalona, for the cultivation and improvement of the national language, in which it has done good service, particularly by the compilation of a Spanish dictionary. A similar institution was founded at St. Petersburg 1783, afterwards united to the Imperial A. At Stockholm a similar academy was established 1786; and at Pesth (for the cultivation of the Magyar language), 1830.—2. ARCHÆOLOGY. At the head of antiquarian institutions stands the *Académie des Inscriptions*, founded at Paris, 1663, by Colbert. See INSTITUTE. For the elucidation of northern languages and antiquities, an academy was founded, 1710, at Upsala, in Sweden; a similar institution was established at Cortona, Italy, 1727. Both have issued valuable works. The *A. of Herculanæum* was founded at Naples, 1755, by the Marquis of Tanucci, for the elucidation of Herculanæan and Pompeian antiquities. Its publications, commencing in 1775, bear the title of *Antichità di Ercolano*. An academy for the investigation of Tuscan antiquities was established at Florence 1807; and at Paris, 1805, a Celtic A. for the elucidation of the language, history, and antiquities of the Celts, especially in France. This society changed its name, 1814, to *Société des Antiquaires de France*.—3. HISTORY. The *Royal A. of Portuguese History* was founded at Lisbon, 1720, by John V. At Madrid, 1730, a learned association was formed for the elucidation of Spanish history. It was constituted an academy in 1738 by Philip V. It has published editions of Mariana, Sepulveda, Solis, and the ancient Castilian chronicles, some of which had never before been printed. A historical academy has existed for some time at Tübingen.—4. MEDICINE. The *Academia Naturæ Curiosorum* was established at Vienna, 1652, by the physician Bauschius, for the investigation of remarkable phenomena in the animal, vegetable, and mineral kingdoms. In honor of Leopold I., who patronized it liberally, it took the additional name of *Cæsareo-Leopoldina*; and since 1808 has had its chief seat at Bonn. Its valuable memoirs have appeared at irregular intervals under the title of *Miscellanea, Ephemerides*, and *Acta*. The *Académie de Médecine* of Paris was founded, 1820, for the prosecution of researches into all matters connected with the public health, such as epidemics, etc. The Surgical A. of Paris (whose functions have partly descended to the preceding) was founded 1731. It was dissolved during the troubles of the first revolution. The Vienna A. of Surgery, established 1783, is, properly speak-

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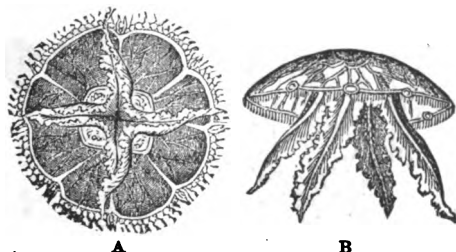
ing, a college.—**FINE ARTS.** The academies of painting and sculpture of St. Petersburg (connected with the Imperial A.) and of Paris are institutions for the education of pupils. The French *Académie des Beaux Arts* is a branch of the Institute (q.v.). The *Royal A. of Arts* in London was founded, 1768, for the promotion of the arts of design, painting, sculpture, etc. The number of academicians is 40. Connected with it is a school, with professors selected from among the academicians. The annual exhibition of the academy is open to all artists of merit. The *Royal Scottish A. of Painting, Sculpture, and Architecture*, was founded at Edinburgh, 1826, and received a royal charter, 1838. The number of academicians is 30; the general plan of the institution is similar to that of the London A. Similar to these also is the *Royal Hibernian A.* incorporated at Dublin 1803. Numerous academies of the fine arts have been established in Italy—at Rome, Milan, Turin, Florence, Mantua, and Modena; also at Madrid, Vienna, and Stockholm.

Many learned Societies differ from Academies only in name; such are The Royal Society of London, The British Association, The Washington Smithsonian Institution, etc., etc. See SOCIETIES.

ACADIA, n. *ă-kă'dī-ă* [F. *Acadie*]: the original and now the poetic name of Nova Scotia.

ACADIE: see NOVA SCOTIA.

ACALEPHÆ, n. plu. *ăk'ă-lē'fē* [Gr. *akalēphē*, a nettle]: name given by Aristotle to the Jelly-fishes or *Medusidæ* and their allies, in allusion to their stinging propensities. As in all other *Cœlenterate* animals, the urticating or stinging properties of such forms reside in the *cnidæ* or 'thread-



Medusa.

A, under surface, showing the mouth in the centre, surrounded by the tentacula, and the ovarial chambers exterior to the origins of these; B, side-view, showing the tentacula hanging down in their natural position.

cells,' with which the tissues of their bodies are provided. These cells consist each of a sac or vesicle, containing fluid and a thread-like filament; the cell rupturing on being pressed or otherwise irritated, and emitting the thread and fluid. The former must act mechanically as a kind of dart; whilst the fluid acts chemically in producing irritating effects by its injection into the wound made by the filament. Some of the forms allied to the Jelly-fishes, and included under

ACALEPHÆ.

the old term *Acalephæ*—such as the *Physaliæ* or ‘Portuguese men-of-war’—sting, by means of these cells, so severely that the effects on the human subject may persist for days or even weeks.

In modern zoology the term *Acalephæ* is now generally abolished. Formerly, this name was given to a group of Cœlenterate or Radiate animals, represented by the true *Medusidæ* or Jelly-fishes, and also by the *Lucernaridæ*; while older systems still included in the group *Acalephæ* other oceanic organisms (*Calycophoridæ* and *Physophoridæ*), among which were the ‘Portuguese man-of-war,’ etc., and also the order *Ctenophora* (*Beroë*, *Cestum Veneris*, etc.), this latter order being now removed to a class superior to that of the Jelly-fishes and their allies. In modern systems of zoological classification, therefore, the old division of the *Acalephæ* is represented by at least two distinct orders of Cœlenterate animals. Thus the true Jelly-fishes or *Medusidæ* constitute the sub-class *Discophora* (‘disk-bearers’), and are distinguished by being free-swimming forms; the body in each consisting of a single organism, composed of a clear gelatinous swimming-bell or *nectocalyx*, from the roof of which the mouth is suspended; whilst throughout the substance of the bell-shaped body a system of *radial* and *circular* canals is distributed. These organisms, familiar to every seaside visitor, swim gracefully by contracting and expanding their clear jelly-like bodies; the aperture or mouth of the bell being generally closed or protected by a membrane named the *veil* or *velum*. Around the margin of the bell *auditory sacs* or hearing-organs are found; and pigment-spots or *ocelli* existing in the same situation, are believed to represent rudimentary eyes. Tentacles or organs of touch are also developed, and may depend from the margins of the bell.



Beroë.

a a, tentacula; *b*, mouth;
c, termination of intestine.



Physalia.

The true *Medusidæ* are named *Gymnophthalmata*, or ‘naked-eyed’ forms, to distinguish them from the *Lucernaridæ*, in which the eyes are protected by a kind of ‘hood.’ The *Lucernaridæ* accordingly are named by some zoologists *Steganophthalmata* (‘covered-eyed’) *Medusæ*; whilst, more properly, the latter term is limited to *Medusa*-like forms included within that order. Among some of these ‘hidden-eyed’ *Medusæ* some very peculiar reproductive phases occur.

ACANTHACEÆ—ACANTHOTEUTHIS.

Thus the egg of a Medusa may be seen to give rise to a little rooted organism, like a little *Hydra* (q.v.) in form, and which is named the *Hydra-tuba*. This latter organism then becomes divided transversely into a number of saucer-like segments, and is named the *Strobila* (Sars); ultimately, the segments become detached; each swimming away as a young Medusa, and being known as an *Ephyra*. These animals feed on minute crustacea, fishes, and the like; and very many exhibit a phosphorescent light, or animal luminosity.

ACANTHACEÆ: see ACANTHUS.

ACANTHOCEPHALA, n. plu. *ă-kăn'thō-sēf'ăl-ă* [Gr. *akantha*, a thorn; *kephālē*, the head]: a class of parasitic worms, in which the head is armed with spines.

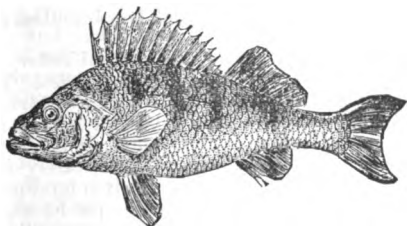
ACANTHODES, n. plu. *ă-kăn'thō-dēs* [Gr. *akantha*, a spine]: a genus of fossil ganoid fishes having thorn-like fin-spines—the type of the family ACANTHODIDÆ, *ăk'ăn-thōd'î-dē*.

ACANTHOMETRINA, n. plu. *ă-kăn'thōm-ě-trî'nă* [Gr. *akantha*, a spine; *mētra*, a womb]: a family of protozoa, characterized by having radiating siliceous spines; a sub-order of Radiolarians.

ACANTHOPHŒNIX, n. *ă-kăn'thō-fē'nîks* [Gr. *akantha*, a spine; *phœnix*, a fabulous Egyptian bird]: a genus of elegant palms, one species bristling with black spines.

ACANTHOPTERYGIAN, a. *ăk'ăn-thŭp'tēr-îj'î-ăn* [Gr. *akantha*, a spine; *ptēru'gion*, a winglet or fin]: a term applied to fishes having the back or dorsal fin composed of spiny rays, as the perch, gurnard, etc. ACANTHOPTERYGII, *-îj'î-î*, the group of bony fishes so named.

ACANTHOPTERYGII, in Zoology: one of the two primary divisions of the *Osseous Fishes* in the system of Cuvier, distinguished by spinous rays in the first portion of



Example of a Fish (Perch) belonging to the division *Acanthopterygii*. the dorsal fin or in the first dorsal, if there are two. The name is derived from the Greek *akantha*, a thorn, and *pteryx*, a wing. The A. are divided by Cuvier into fifteen families, among which are *Percidæ* (Perch, Bass, etc.), *Triglidæ* (Gurnard, Flying-fish, etc.), and *Scomberidæ* (Mackerel, Tunny, etc.).

ACANTHOTEUTHIS, n. *ă-kăn'thō-tŭ'thîs* [Gr. *akantha*, a thorn; *teuthis*, a cuttle-fish]: a genus of fossil cuttle-fishes.

ACANTHUS.

ACANTHUS, n. *ă-kăn'thūs* [Gr. *akanthos* ; L. *acanthus*, the acanthus]: the herb bear's-breech; a genus of herbaceous, prickly plants, Ord. *Acanthaceæ* ; in arch., an ornament resembling the foliage or leaves of the acanthus, or rather the *Acanthus mollis*, whose sinuated lobes are said to have given rise to the capital of the Corinthian pillar. **ACANTHACEOUS**, a. *ăk'ăn-thū'shūs*, also **ACANACEOUS**, a. *ăk'ă-nă'shūs*, armed with prickles. **ACANTHINE**, a. *ă-kăn'thīn*, pertaining to or like the acanthus.

ACANTHUS: name given by the Greeks and Romans to the plants sometimes called Brancursine, of which it is also the botanical generic name. *A. mollis* and *A. spinosa*, natives of the s. of Europe, are the species best known. The twining habit of the plants, their large white flowers,



A. spinosus, natural.

Ornamental *A.* Leaf.

and, above all, the beautiful form of their dark and shining leaves, have led to their artistical application, especially in the capitals of Corinthian columns. See **ORDERS OF ARCHITECTURE**. Roman drinking-cups have been found whose handles are twined with *A.* leaves.—The ancients made the *A. mollis* chiefly their pattern; but in Gothic ornaments more use is made of the smaller and less beautiful leaves of *A. spinosa*.

The genus *A.* is the type of the natural order *Acanthaceæ*, which contains nearly 1,400 known species. They are herbaceous plants or shrubs, chiefly tropical; dicotyledonous. The greater part are mere weeds, but the genera *Justicia*, *Aphelandra*, and *Ruellia* contain some of the finest hot-house flowers. The leaves are opposite, rarely in fours, simple; two or three bracts, which are often large and leafy, accompany each flower. The calyx is persistent, usually 5-leaved, occasionally cut into many pieces, sometimes obsolete. The corolla is monopetalous, hypogynous, usually irregular, deciduous. The stamens are generally two; sometimes four, didynamous, the shorter ones sometimes sterile; the anthers 1-2-celled, opening lengthwise. The disk is glandular; the ovary free, 2-celled, with two or more ovules in each cell; placentæ adhering in the axis; style one. The fruit is a capsule bursting elastically with two valves, the dissepiment also separating into two pieces through the axis. The seeds are roundish, hanging by hard, usually hooked processes of the placenta; testa loose; albumen wanting;

A CAPELLA—ACARUS.

embryo curved or straight; cotyledons large; radicle sub-cylindrical, next the hilum.—Some of the *Acanthaceæ* are used in their native countries as medicines. A valuable deep-blue dye, called Room, is obtained in Assam from a species of *Ruellia*.

A CAPELLA, *â-kâ-pêl' lá*, or A LA CAPELLA, in Music: means, in the church style; it is equivalent to *Alla Breve* (q.v.), a time-signature frequent in church-music. It also denotes that the instruments are to play in unison with the voices, or that one part is to be played by a number of instruments.

ACAPULCO, *â-kâ-pôl' kô*: town in Mexico, of considerable commercial importance, having the best harbor on the Pacific coast of that country; lat. 16° 50' n.; long. 99° 48' w. So well sheltered that deeply laden vessels may lie safely at anchor close to the granite rocks. The town, defended by Fort Diego, on an eminence, has a very unhealthy site, and is one of the places most frequently visited by cholera, which proves especially fatal to new settlers. The population is composed of pearl-fishers, sailors, and husbandmen. Chief exports are cochineal, indigo, cocoa, wool, and skins; imports are cottons, silks, spices, and hardware. Pop. abt. 3,000.

ACARIDÆ, n. plu. *â-kâr'î-dê*, or ACARIDES, n. plu. *â-dêz* [L. *acûrus*; Gr. *akûri*, a mite]: a term applied to such insects as the mite, the tick, the water-mite, etc. ACARUS, n. *âk'âr-ûs*, or ACARI, n. plu. *âk'âr-î*, a numerous genus of insects of the acarides. ACARINA, n. *âk'âr-î'nâ*, a division of the Arachnida, of which the cheese-mite is the type.

ACARNANIA, *âk'âr-nâ'nî-â*: country in ancient Greece, separated from Epirus on the n. by the Ambracian Gulf, now the Gulf of Arta; from Ætolia on the e. by the river Achelôus; and washed s. and w. by the Ionian Sea. With Ætolia it forms one of the *nomes* or departments of the modern kingdom of Greece. The w. part of A.—from the mouth of the Achelôus or Aspropotamo to Cape Actium in the n.w.—is occupied by a mass of rocky and thickly-wooded mountains, rising abruptly from the indented coast, and culminating in the summit of Berganti. A considerable part of A. is overgrown with wood—a rare feature in modern Greece. There is no town of importance in the whole district, though naturally it is not destitute of resources.

ACARUS, *âk'âr-ûs*: a genus of *Arachnides* (q.v.), of the order *Trachearia*, the type of a tribe called *Acarides*, which corresponds with the genus *Acarus* as defined by Linnæus. The species of the Acarides are very numerous. All of them are small; many microscopical. Some are familiar to us under the names of Mites (q.v.), Ticks (q.v.), etc. Some live upon the juices of plants; some in the dung of animals; many species are found in the vegetable and animal substances used for human food, especially when these have been kept for a considerable time, as in cheese, flour, sugar, on the

ACARUS FOLLICULORUM.

surface of preserves, of dried fruits, etc.; others are parasites upon the bodies of animals, particularly in diseased conditions, as in cases of itch. A minute species has been detected in the follicles of the human skin, and others even in the human brain and eyes. Some insects, particularly beetles, are often covered with Acarides. A species (*Trombidium holosericeum*) common in gardens in spring is remarkable for its blood-red color; and a nearly allied but much larger



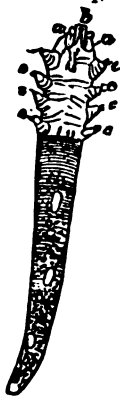
Acarus (Mite):
highly magnified.

species (*T. tinctorum*), found in the East Indies, yields a fine dye. A Persian species (*Argas Persicus*) is poisonous, and causes sores. The bite of many species is annoying, as of the common Harvest-bug (*Leptus autumnalis*). The Acarides have eyes. Some of them have the mouth furnished with mandibles, others with a sucker. They are oviparous, and extremely prolific. They have generally eight legs, but when young many of them have only six. A few are aquatic, and have hairy legs.

ACARUS FOLLICULORUM: the most generally accepted name for a microscopic parasite residing in the sebaceous sacs and hair-follicles of the human skin. It is known also as the *Demodex folliculorum*, the generic name being derived from the Greek words *demōs*, lard, and *dēx*, a boring worm. It was first described by Dr. Simon of Berlin, 1842, under the title of *Acarus folliculorum*, which was suggested by the eminent zoologist, Erichsen of Berlin. In the following year Mr. Erasmus Wilson made it the subject of an elaborate memoir in the *Philosophical Transactions*, in which, as there are doubts as to its exact zoological position, he simply terms it the *Entozoon folliculorum*. According to Professor Owen, who gave it the name *Demodex*, it represents the lowest form of the class *Arachnida*, and makes a transition from the *annelids* to the higher *articulata*. As regards the size and form of these animals there is much variety; they pass their whole existence in the fatty matter of the sebaceous cells, moulting repeatedly during their growth, and being finally expelled from the follicles with the secretions of these organs. Their presence has no reference, according to Mr. Wilson, to disease of the skin or of the follicles. They are met with in almost every person, but are most numerous in those in whom the skin is torpid, in invalids, and in the sick. They vary in length from $\frac{1}{16}$ th to $\frac{1}{100}$ th of an inch, and the accompanying figure represents the magnified parasite. Their number is various; in some persons not more than two or three can be found in a follicle, while in others Mr. Wilson has seen upwards of fifteen. The head is always directed inwards, and when a number are present they seem to be collected into a conical bundle, the larger end of the cone being formed by their heads. The situation in which they are most commonly found is the skin of the face, and particularly that of the nose, but they have been met with also in the follicles of the back, the breast, and the abdomen. It is not known that they are ever found on the limbs.

ACATALECTIC—ACCELERATE.

A reference to the figure shows that the animal possesses eight thoracic appendages (*c, c*) of the simplest and most rudimentary kind, each of which is terminated by three short setæ. The integument of the abdomen is very finely annulated. The mouth is suctorial or proboscoidiform, consisting of two small spine-shaped maxillæ (*b, b*), and an extensive labium capable of being elongated or retracted; it is provided on each side with a short, thick, maxillary palp (*a, a*), consisting of two joints with a narrow, triangular labrum above. The sexes are distinct, but the differences between the male and female are not well recognized. Ova are frequently seen, both in the body of the female and in detached discharged masses. Any one may readily observe the *acari* from his own skin, by collecting between two pieces of thin glass the expressed fatty matter from a nasal follicle, and moistening it with a drop of olive-oil. Very similar if not identical animals have been found in the contents of the pustules of mangy dogs.



Acarus folliculorum, magnified.

ACATALECTIC, *a. ã-kãt'ã-lëk'tik* [Gr. *akatalëktos*, not defective at the end—from *a*, not; *katalëgo*, I cease]: not halting short; without defect. **N.** in poetry, a verse having the complete number of syllables.

ACATER, *n. ã-kã'tër*, or **ACHATOUR**, *n. ã-kã'tör* [Norm. *F. achatour* and *acater*; OF. *achater*, to purchase: *F. achat*, a purchase (see **CATER** and **CATES**): in *OE.*, a purveyor. **ACATES**, *n. plu. ã-kãtz'*, provisions; dainties.

ACATHISTUS, *ãk-ã-this'tüs*: a hymn sung in the ancient Greek Church in honor of the Virgin.

ACAULOUS, *a. ã-kaw'lüs*, also **ACAULINE**, *a. ã-kaw'lín* [Gr. *a*, without; *kaulos*, a stalk]: in *bot.*, applied to a plant without a visible stalk; stemless. **ACAULESCENT**, *a. ãk'-aw-lës'ënt*, having no stem; acaulous.

ACAYUCAN, *ã-kì ó-kán'*: a town of Mexico, a military port, about 100 m. s.s.e. of Vera Cruz, having trade in cochineal. Pop. 6,000.

ACCAD: ancient **BABYLONIA** (q.v.).

ACCEDE, *v. ãk-sëd'* [L. *accëdo*, I assent to, I approve—from *ad*, *cëdo*, I go, I yield: *F. accëder*, to consent—*lit.*, to go to]: to agree to the proposal or request of another; to comply. **ACCE'DING**, *imp.* **ACCE'DED**, *pp.*—**SYN.** of 'accede': to assent; yield; acquiesce; agree; coincide; concur; comply; conform; consent; accord.

ACCELERANDO, *ã-chãl'ër-ãn'dò* (Ital.), in Music: with gradually increasing velocity of movement.

ACCELERATE, *v. ãk-sël'er-ät* [L. *accëllërätus*, accelerated—from *ad*, *celëro*, I hasten; *cëlër*, swift]: to add swift-ness to; to quicken; to hasten; to cause to move faster; to bring on before its time, as fruit. **ACCEL'ERA'TING**, *imp.* **ACCEL'ERA'TED**, *pp.* **ACCELERATION**, *n. ãk-sël'er-ã'ahùn*,

ACCELERATED MOTION—ACCENT.

the act of increasing speed or motion; the act of hastening. **ACCELERATIVE**, a. *āk-sēl'ēr-ā'tiv*, also **ACCELERATORY**, a. *āk-sēl'ēr-ā-tēr'ī*, quickening; hastening. **ACCEL'ERA'TOR**, n. he who or that which accelerates or hastens.—**SYN.** of 'accelerate': to expedite; quicken; urge; instigate; hasten; speed; dispatch.

ACCELERATED MOTION, in Mechanics: motion in which the velocity is continually increasing. When the increments of velocity are equal in equal times, the motion is said to be *uniformly* accelerated. The best example of such a motion is that of a falling body. It is found that near the earth's surface, a body, descending from a state of rest, falls $16\frac{1}{2}$ ft. in the first second. Now, a little consideration will show that at the end of the first second, it is moving at the rate of $32\frac{1}{2}$ ft. per second. For, since the velocity was nothing at first, and increased uniformly, $16\frac{1}{2}$ ft. must have been the *mean* velocity, i.e., the velocity at the middle of the time; and therefore the velocity at the end must be double, or $32\frac{1}{2}$ ft.: $32\frac{1}{2}$ ft. is thus the measure of the accelerative force of gravity. At the end of the second and third seconds, the velocity is found to be doubled, trebled, etc., or $64\frac{1}{2}$, $96\frac{1}{2}$ ft.

ACCELERATION OF THE MOON. It was observed first by Halley, that the time of the moon's revolution round the earth has for several thousand years been decreasing, or her velocity has been increasing. This phenomenon remained for a considerable time inexplicable; at last, Laplace, in 1787, discovered the cause in the varying eccentricity of the earth's orbit, which has been on the decrease since about 12,000 years B.C. Since that time the moon has been gradually coming nearer to the earth; and this will go on till 36,900 after Christ, when the eccentricity of the earth's orbit will begin again to increase.

ACCELERATION OF THE FIXED STARS is the excess of a mean solar day over a sidereal day; i.e., a day measured by the transits of a star over the meridian; the excess is about $3' 56\frac{1}{2}''$ sidereal time.

ACCENDIBLE, a. *āk-sēn'dī-bl* [L. *accendo*, I set fire to]: capable of being inflamed or kindled. **ACCENDIBILITY**, n. *āk-sēn-dī-bīl'ī-tī*.

ACCENT, n. *āk'sēnt* [F. *accent*—from L. *accen'tus*, accent—from *ad, canto*, I sing with energy]: that which is sung with energy; the stress or force of voice put upon a syllable or word; the mark indicating the same; manner of speaking; language or words. **ACCENT**, v. *āk-sēnt'*, or **ACCENTUATE**, v. *āk-sēn'tū-āt*, to pronounce a word or syllable with a particular stress or force of voice. **ACCENT'ING**, imp. **ACCENT'ED**, pp. **ACCEN'TUAT'ING**, imp. **ACCEN'TUAT'ED**, pp. **ACCEN'TOR**, n. in *music*, one who leads. **ACCENTUAL**, a. *āk-sēn'tū-āl*, relating to accent. **ACCENTUATION**, n. *āk-sēn'tū-ā'shūn*, the placing accents on syllables; the act of pronouncing words and syllables properly.

ACCENT, in Grammar: a special stress of voice upon one syllable of a word, by which it is made more prominent than the rest; the accented syllable is sometimes indicated

ACCENT—ACCEPT.

by a mark, as *away'*, *for'tify*. Every word in English has one syllable thus brought markedly into notice. When the accented syllable falls near the end of a long word, there may be one or more secondary accents, as in *rec'ommend'*, *subor'dina'tion*. Sometimes these are so slightly marked as to be scarcely traceable. A. depends upon force of vocal or articulative effort, not upon highness or lowness of pitch. Variations of pitch produce what elocutionists call *inflection*. It is the confounding of A. with a rise of tone, and the contrasting of it with a sinking of tone, that has produced so much confusion on this subject, especially as regards the accents of the ancients. In English, many nouns are converted into verbs simply by transposing the A., as *ob'ject—object'*. It is A., and not quantity, that determines English measures or metres in versification. No rule can be given as to what syllable of a word shall be accented. There seems to be an increasing tendency in our language to throw the A. towards the beginning of words. In the Finnish language, the A. is said to be invariably on the first syllable. — *Emphasis* is to sentences what A. is to words; it is a stress upon one word of a sentence to make it prominent. If A. is syllabic emphasis, emphasis is logical A.

ACCENT, in Music: analogous with A. in language; consists of a stress or emphasis given to certain notes or parts of bars in a composition, and may be divided into two kinds—grammatical, and rhetorical or æsthetic. The first kind of A. is perfectly regular in its occurrence—always falling on the first part of a bar. It is true that long or compound measures of time have, besides the chief A. in every bar, some subordinate accents; but these are only slightly marked. As a general rule, we may observe that the grammatical or regular A. must not be exaggerated. It should be marked only so far as to give a clear sense of rhythm. The æsthetic A. is irregular, and depends on taste and feeling, exactly as does the A. and emphasis used in oratory. In vocal music well adapted to words, the words serve as a guide to the right use of æsthetic accents.

ACCEPT, v. *äk-sèpt'* [F. *accepter*—from L. *acceptāre*, to receive—from *ad*, *captus*, taken—from *capio*, I take]: to take; to take what is offered; to agree or consent to; to acknowledge or promise to pay, as a bill. ACCEPT'ING, imp. ACCEPT'ED, pp. ACCEPT'ER or ACCEPT'OR, n. one who accepts. ACCEPTABLE, a. *äk-sèpt'ä-bl*, pleasing or gratifying to a receiver; agreeable in person or by services; welcome. ACCEPTABLY, ad. *äk-sèpt'ä-blī*, in an acceptable manner. ACCEPT'ABLENESS, n; ACCEPT'ABIL'ITY, n. *-bīl'ī-tī*, quality of being acceptable. ACCEPTANCE, n. *äk-sèpt'-āns*, the receiving with approval; a written promise or engagement to pay money at a specified date—also called a *bill of exchange*; the meaning or sense of a word as generally understood. ACCEPT'OR, n. *-ēr*, the person who gives a written promise to pay money. ACCEPTATION, n. *äk-sèpt'ä-shūn* [*r'*—L.]: reception; the meaning or sense in which a word or expression is generally understood. TO ACCEPT SERVICE, in *law*, to agree between parties that a

ACCEPTANCE—ACCESS.

legal writ or process has been formally served when such has not been the case.—**SYN.** of 'accept': to receive; take; admit.

ACCEPTANCE: in contracts, an agreement to receive something which has been offered, and to complete the contract the acceptance must be absolute and past recall. A. may be express, as in the case where the party to be bound openly declares it; or implied, as where the party acts as if he had accepted. The offer and A. must be by some means understood by both parties, and this may be by language, symbolical, oral, or in writing: as deaf and dumb persons may contract either by symbolical or written language, and at auction sales a nod or a wink and the knocking down of a hammer may legally complete the contract.—*Bill of Exchange.* The A. of a bill of exchange is the act by which the drawee or other person conveys his assent or intention to comply with, and be bound by, the request contained in the bill of exchange to pay the same; or in other words, it is an engagement to pay the bill when due. The A. must be made by the drawee himself, or by some one authorized by him, and such drawee must have capacity to contract and to bind himself to pay the amount of the bill. A bill may either be accepted at the time, or before, or after it is drawn; when the bill is presented, the drawee must accept within twenty-four hours, or it should be treated as dishonored. On refusal to accept, even within the twenty-four hours, it should be protested. The A. may, however, be made after the time appointed for its payment. An A. may be in writing on the bill itself, or on another paper, or it may be verbal. A., also, may be express—a positive undertaking to pay; or implied, where the agreement to pay is to be inferred by any acts of the drawee, as if he write 'seen,' 'presented,' or the day upon which it becomes due upon the bill, this, until otherwise explained, will constitute an A. An A. may be either absolute, conditional, or partial. An absolute A. is a positive agreement to pay the bill according to its tenor, and is usually made by writing upon it 'accepted' and subscribing the drawee's name, or by either writing his name at the bottom or across the bill. In order to bind another than the drawee, it is essential that his name should appear. A conditional A. is one which will subject the drawee or acceptor to the payment of the money on a contingency. The holder is not bound to receive such an A.; but if he do receive it, he is bound by its terms. A partial A. is one which varies from the tenor of the bill, either in agreeing to pay only a part of the sum for which the bill is drawn, or to pay at a different time, or at a different place.

ACCESS, n. *äk-sēs'* or *äk'sēs* [L. *accessus*, a coming to, approach—from *ad*, *cēdo*, I go: F. *accès*]: admission to; approach, or means of approach; an increase. **ACCESSIBLE**, a. *äk-sēs-si-bl*, that may be approached; affable. **ACCESSIBLY**, ad. *-si-blī*. **ACCESSIBILITY**, n. *-bil'ī-tī*, the quality of being accessible. **ACCESSION**, n. *äk-sēs'h'ūn* [F.—L.]: an increase; an addition; an arriving at; that which is added; the acquisition of authority; the coming to the throne of a

ACCESSARY—ACCIDENT.

king. **ACCESSIONAL**, a. *āk-sēs'h-ūn-āl*, additional. **ACCESSORIAL**, a. *āk-sēs-sō'rī-āl*, relating to an accessory. **ACCESSARY**, a. *āk-sēs'sēr-ī*, also spelt **-SORY**, *-sēr-ī*, aiding in doing something. or privy to it; additional. **N.** anything additional; one who aids or gives countenance to a crime. **ACCESSARILY**, ad. *-ī-lī*. **ACCESSARINESS**, n. the state of being accessory. **ACCESSION TO THE CROWN**, the act of coming into the possession of sovereign power. **ACCESSORY BEFORE THE FACT**, a person who conspires with another to commit a crime, or is privy to a crime and abets it before its commission, though absent from the criminal act. **ACCESSORY AFTER THE FACT**, a person who assists a criminal in any way, as to elude justice.—Syn. of 'accession': augmentation; increase; addition; enlargement.

ACCESSARY or **ACCESSORY**, *āk-sēs'sēr-ī*: in criminal law, an **A.** is a person who is not the chief actor in a felony, nor even present at its perpetration, but who is in some way concerned, either *before* or *after* the fact committed. An **A. before** the fact is one who procures or counsels another to commit a crime, he himself being absent. An **A. after** the fact is a person who, knowing a felony to have been committed, receives, protects, or assists the felon. In sudden and unpremeditated offenses there can be no accessories *before* the fact; and in all crimes under the degree of *felony* there are no accessories at all, either before or after the fact, but all persons concerned therein are held to be equally guilty as principals.

There are no accessories in treason, but all are principals, on account of the heinousness of the crime.

ACCESSION, in Law: (*Property*.) the ownership of a thing, whether it be real or personal, movable or immovable, carries with it the right to all products of the thing, and to all that becomes united to it, either naturally or artificially; this is called the right of **A.** The doctrine of property arising from **A.** is grounded on the right of occupancy. The original owner of anything which receives an **A.** by natural or artificial means, as by the gradual addition to lands by deposit from rivers, the growth of vegetables, the pregnancy of animals, the embroidering of cloth, or the conversion of wood or metal into vessels or utensils, is entitled to his right of possession to the property of it, under such its state of improvement, but the owner must be able to prove the identity of the original materials. See **ALLUVION**, in Law. (*International Law*.) **A.** in international law is the absolute or conditional acceptance by one or several States of a treaty already concluded between other sovereignties.

ACCIACCATURA, n. *āk'chē-āk'ā-tō'rū* [It.—from *acciac-cāta*, a grace note]: in *music*, a grace-note, being one semi-tone below the note to which it is prefixed.

ACCIDENT, n. *āk'sī-dēnt* [F. *accident*—from L. *accidentem*, slipping, happening to—from *ad*, to; *cādo*, I fall: *accidentia*, in *mid. L.*, that which happens]: that which happens or befalls; chance; something taking place unexpectedly; an event not foreseen; a quality not essential. **ACCIDENTAL**, a. *āk'sī-dēnt'āl*, happening by chance; casual.

ACCIDENTAL COLORS—ACCLAIM.

N. anything non-essential. **AC'CIDENT'ALLY**, ad. -lŷ, in an accidental manner. **AC'CIDENT'ALNESS**, n. **ACCIDENCE**, n. *āk'si-dēns*, a book containing the declensions and conjugations of words, *lit.* as their terminations fall from or succeed each other—applied to Latin or Greek grammars, or to any grammar. **BY ACCIDENT**, by chance; accidentally.—**SYN.** of 'accident': contingency; casualty; incident; chance;—of 'accidental': casual; incidental; contingent; fortuitous; occasional; unintentional.

ACCIDENTAL COLORS : see **LIGHT**.

ACCIDENTS, in Music : occasional sharps, flats, and naturals placed before notes in the course of a piece.

ACCIDENTS, in Logic : opposed to Essentials, or to Substance. An accident is a property of an object which may be modified, or even be altogether abstracted, without the object ceasing to be essentially what it is. But many of the distinctions made by the older philosophers between accidental and essential are fallacious.

ACCIPITRES, n. plu. *āk-sip'ī-trēz* [L. *accipiter*, a hawk—from *accipio*, I seize]: in *ornith.*, a term applied to the birds of prey, as eagles, falcons, hawks, etc. **ACCIPITER**, n. *āk-sip'ī-ter*, one of the birds of prey; in *surg.*, a peculiar bandage placed over the nose—so named from its appearing as the claw of a hawk. **ACCIPITRINE**, a. *āk-sip'ī-trīn*, hawk-like; rapacious.

ACCIPITRES (plural of the Lat. *accipiter*, a hawk) : name given by Linnæus to an order of Birds, including, according to his system, the genera *Vultur* (Vultures), *Falco* (Eagles, Falcons, Hawks, etc.), *Strix* (Owls), and *Lanius*



Head and Foot of Golden Eagle.

(Shrikes), and principally distinguished by a hooked bill, short, strong feet, and sharp hooked claws. The name has not been generally adopted by subsequent ornithologists, but the order, as a truly natural one, has been retained under the names *Rapaces*, *Raptores*, etc.: the Shrikes, however, being generally excluded from it.

ACCITE, v. *āk-sit'* [L. *accitus*, summoned, called—from *ad, cito*, I move, I excite]: in *OE.*, to cite; to summon; to excite. **ACCIT'ING**, imp. **ACCIT'ED**, pp.

ACCLAIM, v. *āk-klām'* [L. *acclāmo*, I cry out to—from *ad, clāmo*, I cry out: F. *acclamer*, to proclaim]: to call out; to applaud. **N.** a shout of joy or praise. **ACCLAIM'ING**,

ACCLIMATE—ACCLIMATIZE.

imp. **ACCLAIMED'**, pp. *-klāmā'*. **ACCLAMATION**, n. *āk'klā-mā'shūn* [F.]: applause expressed in an audible manner. **ACCLAMATORY**, a. *āk-klām'ā-tēr'ī*, expressing joy or applause. —**SYN.** of 'acclamation': outcry; exclamation; vociferation; bawling; shouting; tumult.

ACCLIMATE, v. *āk-klī'māt*, also **ACCLIMATIZE**, v. *āk-klī'mā-tiz* [L. *ac* for *ad*; Eng. *climate*, which see: F. *acclimater*, to accustom to a climate]: to inure to a foreign climate; to accustom the body to live in a foreign country; to inure a plant or animal to a climate not natural to it. **ACCLI'MATING**, imp. **ACCLIMATED**, pp. *āk-klī'mā-tēd*. **ACCLIMATION**, n. *āk'klī-mā'shūn*, the act or process of becoming habituated to a foreign climate. **ACCLIMATIZING**, imp. *āk-klī'mā-tiz'ing*. **ACCLIMATIZED**, pp. *āk-klī'mā-tiēd*. **ACCLIMATIZATION**, n. *āk-klī'mā-ti-zā'shūn*, the act of inuring to a foreign climate; acclimation. **ACCLIMATURE**, n. *āk-klī'mā-tūr*, the state of being acclimated.

ACCLIMATIZE, or **ACCLIMATE**: to accustom an animal or plant to a climate not natural to it. The process varies widely, according to the amount of difference between the old and the new climate. Where the difference is extreme, important changes take place in the constitution, and are often attended with certain diseases described as 'diseases of acclimatization.' Thus, Europeans settling in tropical parts are liable to disease of the liver, while natives of tropical lands, when resident in England, are exposed to pulmonary disease. The power of bearing changes of climate is greatest in the Anglo-German race, and usually bears a direct ratio to the intellectuality of a race. Civilized people display greater ingenuity and strength of will than savages in accommodating themselves to changes of climate, by making careful corresponding changes in their mode of life. Ulloa and Humboldt assert that persons of and above middle age best stand transportation to tropical climates. Among animals, we find great powers of adaptation to various climates in the horse, dog, cat, rat, etc.; and among plants, in the various cereals, in potatoes, and several weeds common to almost all climates; but there seems to be a limit to the power, at least as seen in the individual. To A. beyond a certain point is the work of some few generations. Almost all the domestic animals now commonly spread over Europe, and even in high northern latitudes, were originally natives of warm climates. The change produced by the acclimatizing of animals may be either an improvement or a deterioration; of the latter, we have an instance in the Shetland pony; of the former, we see an example in the merino sheep of Spain. As an instance of want of the faculty of being acclimatized, the reindeer may serve. Removed from the cold north to the fertile valleys of a temperate clime, the reindeer degenerates and dies. On the other hand, the horse, whose native land is the East, arrives at its highest development in England; and the Syrian sheep, brought northwards as far as Spain, becomes remarkable for its fine fleece. Spain, on the whole, has a climate much warmer than that of Silesia

ACCLIVITY—ACCOMMODATE.

and Pomerania; and yet the merino sheep bred in these countries have become superior to their ancestors imported from Spain. This is a proof that art may do very much in modifying the influences of climate. Silk-worms, brought from China first into Italy, have been acclimatized not only in the south of France, but even on the coast of the Baltic. Recently, attempts have been made to A. in France the llama, the vicugna, and the alpaca of Peru, and with some success in the last instance, as alpacas have been found to thrive in the Pyrenees. It has been generally believed that plants may become gradually inured to a climate so different from that to which they have been accustomed, that if they had been at once transferred to it, they would have perished. On the other hand, it is maintained that each species of plant has certain limits of temperature within which it will succeed, and that alleged instances of acclimatizing have been merely instances of plants formerly supposed to be more delicate than they really were. But as it is certain that different varieties of the same species are often more and less hardy, it would seem that in the production of new varieties by seed there is still a prospect of the acclimatizing, to a certain extent, of species of which the existing varieties are too delicate to grow well in the open air. Of late years numerous Acclimatization Societies have been formed, the best known being the Paris *Société d'Acclimatation*.

ACCLIVITY, n. *äk-kliv'v-ti* [L. *acclivitas*, a rise, an ascent—from *acclivus*, ascending—from *ad*, *clivus*, a slope]: a slope upwards; rising ground; the face of a hill in going up: *declivity*, the face of a hill in coming down.

ACCLOY, v. *äk-kloy'* [L. *ac* for *ad*; Eng. *cloy*, which see]: in *OE.*, to stuff or fill; to crowd; to fill to satiety. **ACCLOYING**, imp. **ACCLOYED**, pp. *äk-kloyd'*.

ACCOLADE, n. *äk'ö-läd'* [F. *accolade*, an embrace, a kiss—from L. *ad*, *collum*, the neck—*lit.*, a falling on the neck, or an embrace]: the ceremony of conferring knight-hood by a gentle blow of a sword on the neck or shoulder. The grand-master, in receiving the neophyte, embraced him by folding the arms round the neck (*ad collum*).

ACCOLADE, in Music: the couplet uniting several staves, as in part-music or pianoforte-music.

ACCOMMODATE, v. *äk-köm'mō-dāt* [L. *accommodatus*, fitted or adapted to a thing—from *ad*, *commōdatus*, adjusted according to a common measure—from *ad*, *con*, together, *mōdus*, a measure, a limit: F. *accommoder*, to suit—*lit.*, to fit or adapt to according to measure]: to make suitable for; to adjust; to adapt to; to supply; to help; to lend. **ACCOMMODATING**, imp. **ADJ.** disposed to afford accommodation; obliging. **ACCOMMODATED**, pp. **ACCOMMODATION**, n. *äk-köm mō-dā'shūn*, suitable convenience; adjustment, as of differences; agreement; what is furnished to supply a want. **ACCOMMODATIVE**, a. *-dā'tiv*, furnishing accommodation; obliging. **ACCOMMODATENESS**, n. fitness. **ACCOMMODATOR**, n. one who. **ACCOMMODATION BILL**, an instrument or bill of exchange, drawn and accepted entirely with the

ACCOMPANIMENT—ACCOMPANY.

view of raising money by its discount, and not, as in the case of a *bonâ fide* bill, for value received, or in payment of a debt. **ACCOMMODATION LADDER**, a light ladder hung over a ship's side to facilitate descent and ascent.—**SYN.** of 'accommodate': to adjust; adapt; conform; suit; aid; assist; serve; oblige; reconcile; arrange;—of 'accommodating': civil; polite; courteous; complaisant; considerate; obliging.

ACCOMPANIMENT, in Music: the performing, with the vocal or with a solo part, of other parts for harmony or effect: it may consist of a whole orchestra, or a single instrument, or even subservient vocal parts. It serves to elevate and beautify, and is subject to certain rules for composition as well as for performance. It must be subservient, and therefore should not predominate. In this point of view, modern composers have often erred by making the A. too full, and causing it to stand out so independent and engrossing, that the principal part is lost. This abuse not only destroys the effect, but also tends to ruin the vocal organ of the singer. In proper A., after faithfully fulfilling its duty, there always remains opportunity enough for display in the ritornells and symphonies. The Italians in their best period were celebrated for the simplicity and effectiveness of their A. Now they have entirely lost this claim. In A. the composer must keep three principal points in view—namely, harmony, rhythmical figure, and suitable choice of instrumentation, in respect to number and character of tone; but all must be subservient to the ruling character of the part accompanied. Right or proper harmony may be said to be born at the same time with the melody, and only requires to be here and there adjusted with care. Otherwise there arises a double character, which interrupts or destroys the melody. The figure of the A. should be so conformed as to supply expression as requisite: it may also, by a succession of secondary ideas, render clear and certain the individuality of the principal part, such as the blustering of the poltroon, the daring of the courageous, or the fear of the timid. The A. should also, by its certainty and firmness, prevent wavering. All qualified orchestras view A. as of high importance. The word also means the art of playing harmony from a figured bass; this, though more in use formerly, is still a necessary study for the A. of recitative. See **FIGURED BASS**.

ACCOMPANY, v. *ăk-kûm'pă-nĭ* [OF. *accompaignier*, to associate with: F. *accompagner*, to accompany—from *compaignie*, company: L. *ac* for *ad*; mid. L. *compānĭum*, a tent companion or company—from *com*, together with; *pānis*, bread]: to go with as a companion; to attend or escort; to be an associate. **ACCOMPANYING**, imp. **ACCOMPANIED**, pp. *ăk-kûm'păn-ĭd*. **ACCOMPANIER**, n. *ăk-kûm'pă-nĭ-ĕr*. **ACCOMPANIMENT**, n. *ăk-kûm'păn-ĭ-mĕnt*, that which accompanies or attends; something that attends or is added by way of ornament or improvement; in *music*, the subordinate part or parts, generally instrumental, which perform with the singer for harmony or effect. **ACCOMPANIST**, n. *ăk-kûm'păn-ĭst*, in *music*, the person who accompanies the voice

ACCOMPLICE—ACCOUCHEUR.

on some instrument.—SYN. of 'accompaniment': concomitant; adjunct; companion.

ACCOMPLICE, n. *äk-köm'plis* [L. *ac* for *ad*; mid L. *complices*, associates in crimes, accomplices—from *con*, *plīco*, I fold: F. *complice*, privy to]: a companion in doing something wrong; a confederate, usually in an ill sense.—SYN. of 'accomplice': an accessory; confederate; assistant; coadjutor; associate; abettor.

ACCOMPLISH, v. *äk-köm'plish* [F. *accomplissant*, accomplishing: mid L. *accōplēo*, I complete fully—from L. *ad*, *complēo*, I fill completely—from *plēo*, I fill]: to fill completely; to complete; to finish entirely; to bring to pass. **ACCOMPLISHING**, imp. **ACCOMPLISHED**, pp. *-plisht*. **ADJ.** rich in acquired qualities and manners; elegant; refined. **ACCOMPLISHMENT**, n. the finishing entirely; attainment; fulfilment; completion; polite manners or education. **ACCOMPLISHER**, n. one who. **ACCOMPLISHABLE**, a. *äk-köm'plish-ä-bl*. **ACCOMPLISHMENTS**, n. plu. polite acquirements.—SYN. of 'accomplish': to effect; execute; perform; achieve; fulfil; realize; furnish; acquit; perfect; obtain; complete.

ACCOMPT, **ACCOMPTANT**, old spellings of **ACCOUNT**, etc., which see.

ACCORD, v. *äk-kawrd'* [mid L. *accordäre*; F. *accorder*, to make a bargain, to agree—from L. *ad*, *cor*, the heart; *cordis*, of the heart: Sp. *acordar*: It. *accordare*]: to make to agree from the heart; to make to agree or correspond; to grant or give; to be suitable. **N.** agreement; consent; harmony. **ACCORDING**, imp. **ADJ.** agreeing; granting; suitable. **ACCORDED**, pp. **ACCORDEE**, n. one who. **ACCORDANCE**, n. *äk-körd'äns*, agreement with a person; conformity. **ACCORDANT**, a. agreeable to; corresponding to. **ACCORDANTLY**, ad. *-li*. **ACCORDINGLY**, ad. *-li*, agreeably; suitably; in conformity with. **ACCORDING TO**, prep. phrase. **OWN ACCORD**, of one's own free will; voluntarily.

ACCORDION, n. *äk-kör'di-ön* (from *accord*, to agree, which see): a keyed wind-instrument producing musical tones by the vibrations of metallic tongues, while wind is supplied by the action of bellows—so named from its agreeable sounds, though it is but little better than a toy. The *concertina* and the *harmonium* are superior instruments, constructed on the same principle—the action of a gust of air on metallic tongues. **ACCORDIONIST**, n. *-ön-ist*, a performer on the accordion.

ACCAST, v. *äk-köst'* [F. *accoster*, to join side to side, to come up to—from mid L. *accostäre*, to adjoin, to touch at the side—from L. *ad*, *costa*, a side: Sp. *acostar*: It. *accostare*—*lit.*, to set one's self side by side with another]: to speak first to; to address or salute. **ACCASTING**, imp. **ACCASTED**, pp. **ACCASTABLE**, a. *äk-köst'ä-bl*, fit to be accosted; easy of access.—SYN. of 'accost': to salute; address; greet; hail; welcome.

ACCOUCHEUR, n. *äk'koo-shér'* [F.—from F. *à*, L. *ad*, to; F. *couche*, a bed: L. *ac* for *ad*, *collocäre*, to lie down, to

ACCOUNT—ACOUTRE.

lay: OF. *accoucher*, to lie down in bed]: a surgeon who attends women in child-birth. ACCOUCHEMENT, n. *äk-koosh'-mîng*, lying in child-birth. ACCOUCHEUSE, n. *äk'koo-shée'*, a mid-wife.

ACCOUNT, n. *äk-kownt'* [OE. *accompte*, to tell, to reckon—from L. *ad, computare*; F. *compter*, to sum up; to reckon—this word used to be written *accommpt*]: a sum stated; state or result of a summing up; a sum stated on a slate or paper; a narrative or statement; regard; profit; worth; consideration; advantage; explanation; a statement of prices; expenses, etc. V. to reckon or compute; to judge; to esteem; to value; to give reasons; to explain; to be liable. ACCOUNT'ING, imp. ACCOUNT'ED, pp. ACCOUNTABLE, a. *äk-kownt'ä-bl*, liable to answer for one's conduct. ACCOUNT'ABILITY, n. *-ä-bil'i-ti*, being liable to answer for one's conduct. ACCOUNT'ABLY, ad. *-bli*. ACCOUNT'ABLENESS, n. ACCOUNT'ANT, n. one skilled in accounts and general book-keeping; one who audits the books and prepares balance-sheets of public companies. ACCOUNT'ANTSHIP, n. the office of an accountant. ACCOUNTANCY, n. *äk-kownt'än-si*, the state or condition of being an accountant. TO TURN TO ACCOUNT, to cause to yield a good return; to produce advantage. TO FIND AN ACCOUNT, to make it worth while. TO OPEN AN ACCOUNT, to have one's name entered in the books of a trader, merchant, or banker, as a customer. TO GIVE A GOOD ACCOUNT OF THEM, to deal with them so as to defeat their schemes and punish them. TO MAKE ACCOUNT OF, to value; to esteem. TO ACCOUNT OF, to pay in behalf of. TO MAKE OF NO ACCOUNT, to consider of no importance; not to take into the computation. ON NO ACCOUNT, for no possible reason or consideration. ON ACCOUNT OF, for the sake of; in behalf of; for the advantage of. ACCOUNT CURRENT, a plain statement or bill of particulars showing the Dr. and Cr. side of business transactions between two parties during a given time. ACCOUNT-DAYS, on the *Stock Exchange*, the settling-days, in which money differences are arranged between brokers. ACCOUNTANT-GENERAL, an officer of Chancery, who is appointed to receive all the money paid into that court.—SYN. of 'account, n.': computation; reckoning; recital; value; relation; detail; advantage; consideration; importance; narration; narrative; explanation; description; end; sake; a bill; record; history; tale; memoir; story;—of 'accountable': amenable; responsible; liable; answerable; obnoxious.

ACCOURAGE, v. *äk-kür'äj* [L. *ac*; Eng. *courage*]: in OE., to animate; to encourage. ACCOURT, v. *äk-kört'* [L. *ac*; Eng. *court*]: in OE., to engage in earnest courtship; to show acts of courtesy.

ACOUTRE, v. *äk-kó'tér* [F. *accoutrer*, to dress or equip—from mid. L. *custos*; OF. *cousteur*, the vestry-keeper—*lit.*, one who invests the priest with the habiliments of his office]: to dress or equip for military service; to arm. ACCOUTRING, imp. *äk-kó'tring*. ACCOUTRED, pp. *äk-kó'térd*. ACCOUTREMENTS, n. plu. *äk-kó'tér-měnts*, military dress or equipments, as the belts for the support of the soldier's arms, his

ACCOY—ACCUMULATE.

pouch or pouches, and sometimes his sash; trappings; ornaments.

ACCOY, v. *āk-koy'* [L. *ac*, to; and *coy*, which see]: in *OE.*, to render coy; to make diffident; to caress.

ACCRA, or **ACRA**, *ak'rá*: capital (since 1875) of the Gold Coast: see **GUINEA**.

ACCREDIT, v. *āk-krēd'it* [F. *accréditer*, to accredit: L. *accrēditus*, believed, given credit to—from L. *ad*, *credo*, I believe or trust in]: to give trust to; to procure honor or credit for; to stamp with authority. **ACCRED'ITING**, imp. **ACCREDITED**, pp. *āk-krēd'it-ed*. **ADJ.** authorized to appear as one possessing the confidence of another, or as a public character.—**SYN.** of 'accredit': to delegate; depute; commission; intrust.

ACCRETION, n. *āk-krē'shūn* [L. *accrētiōnēm*, an increase—from L. *ad*, *creasco*, I grow]: a growing into; increase by external addition of new matter. **ACCRETIVE**, a. *āk-krē'tiv*, growing to by external additions. **ACCRESCENCE**, n. *āk-krēs'ēns*, increase to anything by additions, as in the growth of plants, as distinguished from *excrecence*, a protuberance or growth on a body. **ACCRESCENT**, a. *āk-krēs'ēnt*, in *bot.*, growing after flowering.

ACCRINGTON, *āk'rīng-tōn*: manufacturing town of England, in Lancashire, which has recently increased much in size and importance, lies in a deep valley, surrounded by hills, about 34 m. n.e. of Liverpool, and 13 m. e. of Preston, on the banks of the Hindburn. Christ Church is a fine Gothic building, erected in 1838. The inhabitants are mostly employed in cotton factories, weaving, and calico-printing. **A.** is considered the centre of the cotton-printing business. There are coal-mines in the neighborhood, in which many of the inhabitants find employment. Pop., including Old **A.** (1871), 21,788; (1881), 31,435.—**OLD A.** is an adjacent chapelry, also with cotton-manufactures.

ACCRUE, v. *āk-krō'* [F. *accrue*, growth, increase of the land by the receding of the sea: OF. *accreu*; F. *accru*, increased—from L. *ad*, *creasco*, I grow]: to increase by growing to; to arise from; to proceed; to come to; to be added, as increase or profit. **ACCRU'ING**, imp. **ACCRUED**, pp. *āk-rōd'*. **ACCRU'MENT**, n. addition; increase.

ACCUM, *āk'ūm*, **FREDERICK**: b. Westphalia; d. Berlin, 1838. He went to London, 1803, and became known chiefly by his valuable work, *A Practical Treatise on Gas light*, which was translated into several languages, and became very popular. He wrote also upon practical chemistry, and on the adulteration of food. Ultimately he became professor in an institution in Berlin.

ACCUMBENT, a. *āk-kūm'bēnt* [L. *accumbens* or *accumben'tem*, laying one's self down upon—from *ad*, *cumbo*, I lie down]: leaning upon; reclining at meals. **ACCUM'BENCY**, n. *-sī*, the state of being accumbent.

ACCUMULATE, v. *āk-kū'mū-lāt* [L. *accūmūlātūs*, heaped up, accumulated—from *ad*, *cūmūlūs*, a heap. F. *accumuler*, to accumulate]: to heap or pile up; to collect or

ACCURACY—ACE.

gather together; to increase greatly. **ADJ.** heaped; collected. **ACCUMULA'TING**, imp. **ACCUMULA'TED**, pp. **ACCUMULA'TION**, n. -lū'shūn [F.—L.]: the act of heaping up or collecting together; the things accumulated. **ACCUMULA'TIVE**, a. taken as a whole or in the mass. **ACCUMULA'TIVELY**, ad. -lū'tiv-li. **ACCUMULA'TOR**, n. -tēr, one who gathers or amasses.—**SYN.** of 'accumulate': to amass; heap together; pile up; collect; gather; aggregate.

ACCURACY, n. āk'kū-rā-sī [L. *accūratūs*, careful, exact—from *ad*, *cūra*, care]: state of being prepared with care; correctness; exactness. **ACCURATENESS**, n. āk'kū-rāt'nēs, freedom from error or mistake. **ACCURATE**, a. āk'kū-rūt, prepared with care; very exact; free from error or mistake. **ACCURATELY**, ad. -lī, exactly; without error.—**SYN.** of 'accurate': exact; precise; correct; nice; just; punctual; particular; strict.

ACCURSE, v. āk'kērs' [L. *ac* for AS. *a*, intensive; AS. *corstian*, to excrete by the sign of the cross]: to devote to utter destruction; to call down evil or misery upon. **ACCURSED**, pp. āk'kērs't'. **ADJ.** āk'kēr'sēd, doomed; wicked; execrable. **ACCURSEDLY**, ad. āk'kēr'sēd-lī, after the manner of him who is accursed

ACCUSATIVE CASE: see **DECLENSION**.

ACCUSE, v. āk'kūz' [F. *accuser*, to accuse—from L. *accūsō*, I blame—from *ad*, *causa*, a cause—*lit.*, to bring to a judicial process]: to charge with a crime or fault; to blame. **ACCUS'ING**, imp. **ACCUSED**, pp. āk'kūz'd'. **ACCUSATION**, n. āk'kū-zū'shūn [F. *accusation*; L. *accusatio*]: being declared guilty of a crime or fault; the charge brought against any one. **ACCUS'ER**, n. one who blames or charges some one with a fault or crime. **ACCUS'ABLE**, a. -zū-bī, chargeable with a crime. **ACCUSATORY**, a. āk'kū-zī-tēr-ī, that blames; tending to accuse. **ACCUSATIVE**, a. āk'kū-zū'tiv [L. *accusativus*; F. *accusatif*]: the name for the case in Latin which is called in English the *objective*; censuring. **ACCUSATIVELY**, ad. -tiv-li, after the manner of the accusative case.—**SYN.** of 'accuse': to charge; impeach; arraign; blame; censure; indict;—of 'accusation': censure; charge; crimination; impeachment.

ACCUSTOM, v. āk'kūs'tūm [L. *ac*, for *ad*; F. *coutume*; OF. *coustume*, and *costume*; mid. L. *costūma*, custom, habit: F. *accoutumer*, to accustom]: to make familiar with by habit or use; to inure to. **ACCUS'TOMING**, imp. **ACCUS'TOMED**, pp. -tūmd. **ADJ.** frequent; usual. **ACCUS'TOMARY**, a. -ēr-ī, usual; customary. **ACCUS'TOMARILY**, ad. -ī-lī, according to common or usual practice.—**SYN.** of 'accustom': to inure; familiarize; habituate; exercise; train.

ACE, n. ās [F. *as*; It. *asso*, a single point of cards or dice—from L. *as*, a pound or unit]: a unit; a trifle; a single figure or mark on a card, as ace of clubs. **WITHIN AN ACE**, within a very small quantity or degree; very nearly. *Note.*—The L. *as*, a pound, came to signify the unit of measure, and thence was applied to the card or side of a dice-cube which is marked with a single point (see *Brachet* by Kit-

ACELDAMA—ACETABULIFERA.

chen): others affirm there is no connection between L. *as* and Eng. *ace*.

ACELDAMA, n. *ă-sěl' dă-mă* or *ă-kěl'* [Chald. *akel*, a field; *dama*, blood]: a field near Jerusalem, so named because bought by Judas with the price of blood, and the scene of his violent death by his own hands; a place where much blood has been shed.—Acts. i. 19.

ACEPHALA, n. plu. *ă-sěj' ũ-lă* [Gr. *a*, without; *kephālē*, the head]: applied to those mollusks that have no distinct head—as the oyster, the scallop, etc.; the Lamellibranchiata. See **MOLLUSCA**. **ACEPHALOUS**, a. *ă-sěj' ũ-lūs*, headless; distinguished from *encephalous*, having a distinct head; in *bot.*, applied to the style which is lateral, and does not surmount the ovary. **ACEPHALOCYST**, n. *ăs'ěj-ăl' ō-sist* [Gr. *kustis*, a bladder]: a species of internal parasite consisting of an oval vesicle filled with fluid.

ACER, and **ACERACEÆ**: see **MAPLE**.

ACERB, a. *ă-sərb'* [F. *acerbe*—from L. *acer'bus*, unripe, sour: F. *acerbité*; L. *acerbitas*, harshness, acerbity]: sour; bitter. **ACERBITY**, n. *ă-sərb' i-ti*, also **ACERBITUDE**, n. *ă-sərb' i-tūd*, sourness with bitterness; sharpness of temper and manners.

ACERIC, a. *ă-sér' ik* [L. *ăcer*, a maple-tree]: of the maple-tree—as *aceric acid*, an acid found in its juice.

ACEROSE, a. *ăs'er-ōz*, also **ACEROUS**, *ăs'er-ūs* [L. *ăcus*, a needle; *ăcer*, sharp]: in *bot.*, linear and sharp-pointed, applied to the leaves of the fir tribe. **ACEROSE**, a. [L. *ăcus*, chaff]: husky, chaffy.

ACERRA, *ă-chěr'rá* (anc. *Acerræ*): town in s. Italy, in the province of Caserta, 9 m. n.e. of Naples, with which it is connected by railway. It was once fortified, but the walls are now crumbling into ruins. It has a cathedral and seminary. The country around is fertile, but extremely unhealthy through malaria, caused partly by the sluggish artificial channels called the Regj Lagni, the representatives of the *Clanlus non æquus Acerris* of Virgil; and partly by the flax-grounds, where the stalks are left to macerate. Pop. 15,000.

ACERVAL, *ă-sér'văl* [L. *acer'vus*, a heap]: in heaps. **ACERVATE**, v. *ă-sér'văt*, to heap up. **ACER'VATING**, imp. **AC'ERVAT'ED**, pp. **ACERVATION**, n. *ăs'er-vă-shŭn*, act of heaping up. **ACERVULI**, n. plu. *ă-sér'vũ-li*, little heaps or clusters. **ACERVULINE**, a. *ă-sér'vũ-lin*, filled up in irregular heaps—applied in *zool.* to the shells of certain Foraminifera.

ACESCENT, a. *ă-sēs'ěnt* [L. *aces'cens* or *ăcescen'tem*, becoming sour]: slightly sour; tending to acidity. **ACESCENCE**, n. *ă-sēs'ěns*, or **ACESCENCY**, n. *ă-sēs'ěn-si*, tendency to acidity.

ACETABULIFERA, n. plu. *ăs'ě-tũb' ũ-lif'ér-ă* [L. *acētāb'ulum*, a sucker, a vinegar-cruet; *fēro*, I bear or carry]: those cuttle-fishes whose arms or tentacles are furnished with rows of little cups or suckers. **AC'ETAB'ULUM**, n. *ă-lŭm*, plu. **AC'ETAB'ULA**, in *zool.*, applied to such organs as the

ACETAL—ACETIC ACID.

cup-like sucking-disks on the arms of the cuttle-fish; in *anat.*, the socket of the hip-joint. ACETABU'LIFORM, a. -ū'li-fawrm, cup-shaped.

ACETAL, ā-sē'tāl ($C_4H_{10}O_4$): a colorless liquid, of an agreeable odor, and a flavor said to resemble that of the hazel-nut. It is one of the products of the slow oxidation of alcohol under the influence of finely-divided platinum, or of chlorine, or of dilute sulphuric acid and peroxide of manganese. Its specific gravity is 0.821, and it boils at 221° . It yields various reactions and products of interest in organic chemistry.

ACETARIOUS, a. ās'ē-tū'rī-ūs [L. *acētum*, vinegar]: applied to plants used as salads. ACETARY, n. ās'ē-tēr'i, the acid pulp of certain fruits. ACETATE, n. ās'ē-tūt, a salt of acetic acid; a compound of acetic acid with another element, as lead, which is then called 'acetate of lead'. AC'ETAT'ED, a. combined with vinegar. ACETIC, a. ā-sēt'ik, of vinegar; sour. ACET'IC ACID, the pure acid of vinegar.

ACETIC ACID, ā-sēt'ik: the sour principle in vinegar, is the most common of the vegetable acids. If alcohol, diluted with water, be mixed with a ferment, such as yeast, and exposed to the air at, or a little above, its ordinary temperature, it is rapidly converted into vinegar or A. A. The change is accompanied by the absorption of oxygen, 2 atoms of which combine with as many of hydrogen to form water, while other 2 take the place of the hydrogen which has become water, so that A. A. is produced from alcohol by the substitution of 2 atoms of oxygen for 2 of hydrogen. Thus alcohol is C_2H_5O . If we take from this 2 atoms of hydrogen, and add 2 of oxygen, it becomes $C_2H_4O_2$. But from the mode in which A. A. acts when it combines with bases, it is certain that one of the equivalents of hydrogen and one of oxygen are united as water, so that the formula of A. A. is $C_2H_4O_2 + HO$. A striking experiment may be made illustrating the mode in which alcohol is converted into A. A. If slightly diluted alcohol be dropped upon *platinum-black*, the oxygen condensed in that substance acts with great energy on the spirit, and A. A. is evolved in vapor. Here the whole office of the platinum is to determine the oxygen of the air, and the hydrogen of the alcohol to unite. In the commercial processes for manufacturing vinegar, some vegetable substance containing nitrogen (one of the albuminous principles) takes the place of the platinum-black, and determines the same change. For the new views now prevailing in regard to the chemical process involved, see ACETIFICATION. A. A. is not known in the anhydrous form. In its most concentrated state it contains an equivalent of water, $C_2H_4O_2 + HO$. When it combines with metallic oxides, they take the place of the water; acetate of soda, for example, consisting of anhydrous soda and anhydrous A. A., $NaO, C_2H_4O_2$. The salts of A. A., called ACETATES, are numerous and important in the arts. The most important is acetate or sugar of lead. See LEAD. For the commercial processes of manufacturing A. A., see VIN EGAR.

ACETIFICATION—ACETYL.

ACETIFICATION (see **ACETIC ACID**). A totally new view is now largely adopted regarding the process by which wine, beer, cider, and alcoholic fluids generally become converted into acetic acid, when they are exposed to the action of the air, and especially in hot weather. The views held by Liebig regarding the part that wood-shavings, sand, ash, etc., play in condensing oxygen, and transmitting it to the alcohol, are now supplanted by those of Pasteur, who maintains that the true acetifying matter is a very minute mycoderma—a special vegetable organized being. It is impossible to conceive a more simple form of vegetation, consisting of extremely minute spores arranged in chains; each spore having a mean diameter not exceeding $\frac{1}{1700}$ th of an inch, and the length being about twice as great. The rapidity of the development of these spores, under favorable circumstances, is almost inconceivable; and the power which they possess in fixing the oxygen of the air, and of transmitting it to the alcohol, and of establishing an incomplete combustion of the latter, is no less wonderful. A surface of a square yard, covered with this plant, is able, in the course of 24 hours, to fix the oxygen of more than 1,000 quarts of air. The temperature of the surface of the fluid at which this slow combustion is proceeding is considerably raised, and often remains for several days at 21° or 25° above that of the surrounding air. The process which has just been described bears a very close analogy to the respiratory process, the oxygen of the air being in one case fixed by minute vegetable cells, and in the other by the blood-corpuscles.

ACETIFY, v. *ă-sĕt'ĭ-fĭ* [L. *acĕtum*, vinegar; *fĭw*, I am made]: to convert or change into acetic acid or vinegar. **ACETIFYING**, imp. **ACETIFIED**, pp. *-fĭd*. **ACETIFIER**, n. *-fĭ-ĕr*, that which changes into vinegar. **ACETIFICATION**, n. *ă-sĕt'ĭ-fĭ-kă'shŭn*, the act or operation of making sour or changing into vinegar. **ACETONE**, n. *as'ĕ-lŏn*, a colorless inflammable liquid of peculiar odor, obtained from the destructive distillation of acetates, also from citric acid, starch, sugar, etc. **ACETOSE**, a. *as'ĕ-tŏz*, also **ACETOUS**, a. *ă-sĕ'tŭs*, sour; sharp. **ACETOSITY**, n. *ăs'ĕ-tŏs'ĭ-tĭ*, the quality of being sour or sharp. **ACETIMETER**, n. *ăs'ĕ-tĭm'ĕ-tĕr* [Gr. *metron*, a measure]: an instrument for measuring the strength of acetic acids.

ACETYL, n. *ăs'ĕt'ĭl* [L. *acĕtum*, acid; Gr. *hŭlē*, matter]: the hypothetical radical of acetic acid. **ACETYLENE**, n. *ăs'ĕt'ĭl-ĕn*, a hydrocarbon, or inflammable gas, containing equal volumes of carbon and hydrogen.

ACETYL ($C_2H_3O_2$), known also under the names *Acetoxy* and *Othyl*: an organic radical not yet isolated, but supposed to exist in acetic acid and its derivatives; the rational formula for acetic acid being on this hypothesis

$C_2H_3O_2 \left. \begin{array}{l} C \\ H \end{array} \right\} O_2$. See **TYPES, CHEMICAL**. The reason for as-

suming the existence of this radical in the acetic compounds is, that the formula to which it leads affords the simplest explanation of the most important reactions of acetic acid. Thus, when acetic acid is treated with a metallic oxide or

ACHAIA—ACHELOUS.

hydrate, the basic atom of hydrogen is replaced by a metal, and an acetate of the metal $\left. \begin{matrix} C_4H_3O_2 \\ M \end{matrix} \right\} O_2$ is produced. The term *acetyl* was formerly applied to the radical C_4H_3 , and the anhydrous acid was regarded as a binoxide of this radical. Hence the two other names for the subject of this article—the former suggested by Kolbe, and the latter (an abbreviation of oxygen-ethyl) by Williamson.

ACHAIA, *a-kā'ya*: a small district in the n. of the Peloponnesus, was divided into twelve little states, and was bounded e. by the Saronic Gulf, n. and w. by the Bay of Corinth, and s. by Arcadia and Elis. The land, rising gradually from the coast to the hills of the interior, was famed, in ancient times, for fertility in the produce of oil, wine, and fruits. When the Romans divided the whole of Greece into Macedonia and A., the latter included all Greece excepting Thessaly. In the modern kingdom of Greece, A. forms, with Elis, a *nome* or department, in the extreme n. w. of the Morea, and its chief town is Patras (q. v.). Excepting the w. coast, the land is fertile, and produces corn, wine, and oil.—The ancient Achæans were, in a great measure, separated from the other people of Greece. Their twelve little towns, of which Ægium was the chief, formed a confederacy which was dissolved in the Macedonian times, but was renewed B. C. 280, and subsequently extended itself, under the name of the *Achæan League*, throughout Greece, until B. C. 146, when Grecian liberty fell under the power of Rome.

ACHALGANJ': town of British India, in the s. part of the chief-commissionership of Oude, 4 m. n. e. from the Ganges, n. lat. 26° 25', and e. long. 80° 35'. Pop. 5,000, of whom 500 are Mohammedans, and the rest Hindus.

ACHARD, *â-shar'*, FRANZ KARL: 1754–1821; b. Berlin: meritorious naturalist and chemist, distinguished by his improvements in the process of preparing sugar from beet-root. His experiments, under the patronage of the King of Prussia, after years of experiment, resulted in complete success, through his discovery of the true method of extracting the sugar. In this he had the aid of Neubeck, a medical man, and the use of a model farm in Lower Lusitania. Afterwards, A. was called to Berlin as director of the physical class in the Academy of Sciences. He wrote, with other essays, one on the *European Manufacture of Sugar from Beet* (Leip. 1809).

ACHE, n. *āk* [AS. *æce*, an ache, a pain: Gr. *achos*, grief, pain either in body or mind: Ger. *ach*, alas, applied to grief]: a continued pain more or less severe. V. to be in continued bodily pain; to suffer grief. **ACH'ING**, imp. N. same sense as *ache*. **ADJ.** having a continued pain in a moderate degree. **ACHED**, pp. *ākēd*.

ACHEILLARY, a. *āk-īl'ēr-ī* [Gr. *a*, without; *cheilos*, a lip]: in *bot.*, having the labellum undeveloped, as in an orchid.

ACHELOUS, *ak'e-lō'us*, now called ASPROPOTAMO. *ās-*

ACHENE—ACHIEVE.

pro-pot'á-mo (i.e., White River, from the cream-color of its waters): the largest river in Greece, rises in Mount Pindus, flows through the land of the Dolopians, divides Ætolia from Acarnania, and falls into the Ionian Sea. The extensive alluvial deposits at the mouth of this river have been observed from ancient times. It is said that the banks of the A. were anciently the haunt of lions.

ACHENE, n. *ăk-ě'ně*, also ACHENIUM, n. *ăk-ě'ně-ŭm*: ACHE'NIA, plu. [Gr. *acha'nēs*, not gaping, not opening the mouth—from *a*, not; *chai'nō*, I yawn or crack, as ripe fruit]: a term now frequently employed by botanists to designate a dry, hard, one-seeded, indehiscent fruit, in which the integuments of the seed are closely applied to it, but distinct from it. Such are what are popularly called the *seeds* of borage, and other plants of the same natural order. They were termed nuts by Linnæus. Sometimes the achenia are aggregated upon a common receptacle, forming what is called an *etaerio*, as in the ranunculus, in which they are placed upon a dry receptacle, or in the strawberry, in which the receptacle is fleshy. Sometimes the aggregated achenia are inclosed within the fleshy tube of the calyx, as in the rose. The fruit of the *Compositæ* is also sometimes called an A.; but a different appellation (*cypsela*) has been given to it, because the tube of the calyx coheres with the fruit, the name A. being limited to *superior* fruits. ACHENO-DIUM, n. *ăk-ě-nō'di-ŭm* [the Latinized postfix, *odē*, signifying 'fulness of']: a fruit composed of many achenia.

ACHERON, *ăk'e-ron*: name given to several rivers by the ancients, always with reference to some peculiarity, such as black or bitter waters, or mephitic gases. The A. in Thesprotia, which flows through the lake Acherusia, and pours itself into the Ionian Sea; another river of the same name in Elis, now called Sacuto; and several streams in Egypt, were supposed to have some communication with the infernal world. According to Pausanias, Homer borrowed from the river in Thesprotia the name of his infernal A., which the later poets surrounded with many imaginary horrors. Other lakes besides that above mentioned bore the name of Acherusia; e.g., the lake near Hermione in Argolis.

À-CHEVAL POSITION, *a-shě văl*: when troops are arranged so that a river or highway passes through the centre and forms a perpendicular to the front, they are said to be drawn up in A. P. Wellington's army at Waterloo was *à-cheval* on the road from Charleroi to Brussels. In cases where a river forms the perpendicular to the front, secure possession of a bridge is necessary; otherwise one half of the troops might be routed, while the remainder stood idly as spectators.

ACHIEVE, v. *ă-chěv'* [F. *achever*, to perfect, to complete—from *à*, to; *chef*, head: L. *ad*, *caput*, the head—*lit.*, to bring to a head]: to finish or complete successfully; to carry on progressively to an end. ACHIEV'ING, imp. ACHIEVED, pp. *ă-chěvd'*, gained. ACHIEVE'MENT, n. a shield of armorial bearings, particularly applied to the funeral shield, called a *hatchment*; something done by continued exertion.

ACHILL—ACHILLÆA.

ACHIEV'ER, n. one who. **ACHIEVABLE**, a. *ă-chēv'ă-bl*, that may be effected or completed. **ACHIEV'ANCE**, n. *-āns*, performance.—**SYN.** of 'achieve': to accomplish; effect; perform; execute; fulfil; complete; realize; obtain;—of 'achievement': exploit; feat; deed; accomplishment; performance; completion.

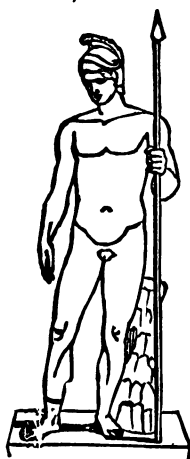
ACHILL, *ak'ūl*, or 'EAGLE' ISLE: off the w. coast of Ireland; reckoned within the county of Mayo. It is 15½ m. long by 12½ m. broad, and has a very irregular coast line, though its general shape is almost that of a right-angled triangle. It has a wild and desolate appearance; most of the surface is boggy; of the 35,000 acres which the island contains, not half a thousand are cultivated. There are three villages in A., and a number of hovels or huts scattered over its barren moors, sometimes in small clusters, forming hamlets, but so wretched as hardly to be fit for beasts. A. rises towards the n. and w. coast, where the mountains attain an elevation of 2,000 ft. One of them, composed, like the rest of the island, wholly of mica-slate, presents, towards the sea, a sheer precipice from its peak to its base, a height of 2,208 ft. There is a mission-station in the island, an exception to the general wretchedness of the houses. Pop., gradually decreasing from emigration and other causes, amounted, 1881, to 6,700.

ACHILLÆA, *ă-kīl-lē'ă*: genus of plants of the natural order *Compositæ* (q.v.), having small flowers (heads of flowers) disposed in corymbs, and the receptacle covered with chaffy scales (small bractæ). The florets of the ray are female, and have a short, roundish tongue or lip; the florets of the disk are hermaphrodite, the tube of the corolla flatly compressed and two-winged; the involucre is imbricated. The common yarrow or milfoil (*A. millefolium*) abounds in all parts of Europe and in some parts of North America—into which it has perhaps been carried from Europe—growing in meadows, pastures, etc. It is about a foot in height; its leaves bipinnate, the pinnæ deeply divided, the segments narrow and crowded. It has white or rose-colored flowers. The leaves have a bitterish aromatic, somewhat austere taste, and little smell; the flowers have a strong aromatic smell, with an aromatic bitter taste, and contain an essential oil, a resin, bitter extractive, gum, several salts, and traces of sulphur. Both leaves and flowers are used in medicine as a powerful stimulant and tonic. The leaves were formerly much used for healing wounds, and are still so employed by the common people in the Highlands of Scotland and in some parts of the continent. The expressed juice is a popular spring medicine in Germany. Yarrow is often sown with grasses intended to form permanent pasture for sheep; and *A. moschata*, sometimes called musk milfoil, is cultivated as food for cattle in Switzerland. *A. moschata*, *A. atrata*, and *A. nana*—all natives of the Alps—are very aromatic, and bear the name of *genipi* or *genipp*. The inhabitants of the Alps value them very highly, and use them for what is called *Swiss Tea*. They are very stimulating and tonic; as are also *A. setacea* and *A. nobilis*, both

ACHILLES.

natives of Switzerland and other middle parts of Europe, and *A. ageratum*, a native of the s. of Europe, used by the French as a vulnerary, and called *Herbe au Charpentier*.— Sneezewort (*A. Ptarmica*) is a native of Britain and other parts of Europe, 1 to 3 ft. high, with lanceolate leaves, and much larger flowers than the common milfoil. It grows in meadows and damp places. The root, which is aromatic, is used as a substitute for *Pellitory of Spain* (q.v.), and the whole plant is pungent and provokes a flow of saliva.

ACHILLES, *ä-kil'lez*, the hero of Homer's *Iliad*: son of King Peleus and Thetis, a sea-goddess, belonging to a line descended from Jove. Of his life before the Trojan war, and of his death after the fall of Troy, the poets after Homer first profess to give accounts. We are told that he was dipped in the river Styx by his mother, and was thus made invulnerable, except in the heel, by which he was held during the process; hence 'the heel of A.' became a proverbial phrase to denote any vulnerable point in a man's character. It had been prophesied at his birth that his life would be short; and, therefore, when the seer Calchas announced that without A. Troy could not be taken, his mother, to keep him from the dangers of the expedition, concealed him at the court of King Lycomedes, among whose daughters the boy lived disguised as a girl. But Ulysses discovered him by a stratagem. He offered to the young ladies a number of articles, some of feminine attire and others of arms; and the young warrior was betrayed by his choice. A., in the Greek campaign against Troy, appeared with fifty vessels manned by his followers, the Myrmidons; but remained sullen and inactive during a great



Achilles, from an ancient statue.

part of the contest. When the city of Lyrnessus was taken, he had seized and carried away the beautiful Briseïs. A pestilence in the Greek camp being ascribed to the anger of Apollo, whose priest had been robbed of his daughter, Chryseïs, by Agamemnon, Agamemnon was compelled by the army to send Chryseïs back to her father. On this, he took away Briseïs from A., which greatly offended the latter. With this incident the *Iliad* begins. Neither the splendid offers made by Agamemnon nor the disasters of the Greeks could afterwards move A. to take any part in the contest, until his friend Patroclus was slain by Hector. The hero then buckled on his armor, which had been made for him by Vulcan, and of which the shield is described at great length by Homer. The fortunes of the field were now suddenly changed in favor of the Greeks; and the vengeance of A. was not satiated until he had slain a great number of the Trojan heroes, and lastly Hector, whose body he fastened to his chariot, and dragged into the

ACHILLES' TENDON—ACHROMATIC.

Grecian camp. He then buried his friend Patroclus with great funeral honors. King Priam, the father of Hector, came by night to the tent of A., and prayed that the body of his son might be given back to the Trojans. A. consented; and with the burial of Hector the *Iliad* closes. We are told that soon after the fall of Hector, A. made a contract of marriage with Polyxena, the daughter of the Trojan king, but was slain by her brother Paris in the temple of Apollo, where the marriage should have been celebrated. According to other accounts, he was slain by Apollo, who assumed the likeness of Paris as a disguise. His ashes were placed in an urn, with those of his friend Patroclus, and were buried on the promontory of Sigeum, where, after the fall of Troy, the princess Polyxena, who had been made a prisoner, was offered as a propitiatory sacrifice.

ACHILLES' TENDON, n. *ă-kîl'lēz tēn'dōn* [L. *Achillis tendo*, the tendon of Achilles]: named from the vulnerable tendon or part in the heel of Achilles; attaches the soleus and gastrocnemius muscles of the calf of the leg to the heel-bone. It is capable of resisting a force equal to a 1,000 lbs. weight, and yet is frequently ruptured by the contraction of these muscles in sudden extension of the foot. Ancient surgeons regarded wounds or serious bruises of the A. T. as fatal.

ACHIMENES, n. *ăk'î-mē'nēz* [a word of unknown meaning, originally given by Dr. Patrick Browne]: an elegant and free-flowering extensive genus of plants, of the natural order *Gesneriæ* (q. v.), tropical and sub-tropical, and furnished with scaly underground tubers. The species are numerous—natives of the warm parts of America.

ACHLAMYDEOUS, a. *ăk'lâm-îd'ē-ūs* [Gr. *a*, without; *chlamos*, a loose warm cloak]: in bot., having no floral envelope; denoting naked flowers. ACHLAMYDEÆ, n. plu. *ăk'lâm îd'ē ē*, the class of naked flowers having only the essential organs and no floral envelope.

ACHMIN: see EKHMIN.

ACHMITE, n. *ăk'mîť* [Gr. *akmē*, a sharp point or edge]: a silicate of iron and soda, found in long greenish-black crystals, terminating in sharp points.

ACHOR, n. *ă'kōr* [Gr. *achor*, a soreness of the head]: a species of scald-head with soft and scaly eruptions.

ACHORÉS (see ACHOR): one of the forms of pustules—viz., that in which the pustules are very small, but have large inflamed bases. They are most common on the faces of children, and their secretion forms those large, thick, irregular scabs, resembling dried honey, which are so common on children's chins. They seem to be inflamed hair sacs or sebaceous follicles. Their treatment is the same as that for Impetigo (q. v.).

ACHROITE, n. *ăk'rō-îť* [Gr. *a*, without; *chrōā*, color]: applied to the colorless varieties of tourmaline.

ACHROMATIC, a. *ăk'rō-măt'îk* [Gr. *achrōmātos*, colorless—from *a*, without; *chrōmā*, color]: free from color; *lenses* are *achromatic* when their spherical aberration is corrected,

ACHROMATIC—ACID.

and the production of prismatic colors thereby avoided. **ACHROMATISM**, n. *ä-kröm'ä-tizm*, also **ACHROM'ATIC'ITY**, n. *-tis'i-ti*, state or property of being achromatic.

ACHROMATIC (without color): name applied to lenses and telescopes through which objects are seen without false colors, or, in other words, free from that colored fringe which, in the old telescopes, surrounded the object, and diminished its distinctness. The white, or rather colorless ray of light is composed of several colored rays which have various degrees of refrangibility. See **REFRACTION**; **LIGHT**; **COLOR**. When the direct ray is refracted, it divides itself into colored rays, deviating in various degrees from the right line of the primitive ray. The rays thus refracted by the convex object-glass do not meet exactly in one point, the focus of the glass, but rather at several points, so as to produce the various colors, red, blue, and yellow, which surround the object. Newton, misled by imperfect experiments, believed it impossible to find any remedy for this defect; but Euler, in 1747, expressed his conviction that the desired A. improvement was practicable, and this belief was confirmed by the researches of the Swedish mathematician **Klingenstierna**. The practical solution of the difficulty was reserved for **John Dollond**; though, when he obtained a patent for his A. telescope, a priority of invention was claimed for a gentleman of the name of **Hall**. Dollond succeeded in forming an A. object-glass by a combination of crown-glass and flint-glass, which follow one law as to their relative refractive powers, and another as to their powers of dispersing the colors. By uniting a convex lens of crown-glass with a concave one of flint-glass, in certain relative dimensions, a reunion of the colored rays may be effected, and the object will be seen without false colors. In the construction of A. telescopes, Dollond was followed by his son **Peter**, and also by the optician **Ramsden**. A further improvement was made by **Fraunhofer** of **Munich**, who succeeded in producing perfectly pure glass—very difficult with flint-glass. An important improvement of the A. telescope is due to the Viennese optician **Plössl**, who has lately invented what he calls the dialytic telescope, in which the several kinds of glass composing the compound object-glass are placed not close together, but at regulated distances apart. This arrangement allows a shortening of the tube. See **TELESCOPE**.

ACICULAR, a. *ä-sik'ü-lér* [L. *acus*, a needle; *acic'ulä*, a little needle]: formed like a needle, applied to mineral crystals which occur in slender needle-like prisms or prickles. **ACIC'ULAR'LY**, ad. *-lér'li*. **ACICULITE**, n. *ä-sik'-ü-lit*, needle-ore; an ore of bismuth found embedded in quartz in long, thin, steel-gray crystals. **ACIFORM**, a. *äs'i-fawrm* [L. *acus*, *forma*, shape]: needle-shaped.

ACID, n. *äs'id* [L. *acidus*, sharp to the taste, sour—from *acēō*, I am sharp or sour—connected with *acus*, a needle]: something which causes sourness to the taste; in *chem.*, a body which unites with bases to form salts. **ADJ.** sour; sharp; biting to the taste. **ACIDITY**, n. *ä-sid'i-ti*, also

ACIDASPIIS—ACIDS.

ACIDNESS, n. *ús'id-nēs*, the quality of being sour. **ACIDIFEROUS**, a. *ús'id-í'f'ér-ús* [L. *fērō*, I bear]: containing acid. **ACIDIFY**, v. *ú-síd'í-f'í* [L. *fíō*, I am made]: to make a body sour; to change into an acid. **ACIDIFYING**, imp. **ACIDIFIED**, pp. *-fid*. **ACIDIFICATION**, n. *ú-síd'í-f'í-kā shūn*, the act or process of changing into an acid. **ACIDIFIER**, n. *ú-síd'í-f'í'ér*, that which changes something into an acid. **ACIDIFIABLE**, a. *ú-síd'í-f'í-ú-bl*, that may be converted into an acid. **ACIDIMETER**, n. *ús'í-dím'ě-tér* [L. *acidūs*; Gr. *mētron*, a measure]: an instrument used in testing the strength of acids. **ACIDIMETRY**, n. *-ě-tr'í*, the process by which the free acid in a substance is determined. **ACIDIC**, a. *ú-síd'ík*, in *geol.*, denoting one of the two great groups into which the igneous rocks are divided, in which the *silica* ranges from 50 to 80 per cent; the other being the *basic*, in which the *silica* is less, and the heavier bases, as magnesia, lime, etc., predominate.

ACIDASPIIS, n. *ús'í-dūs'p'is* [Gr. *akís*, a spear-point; *aspis*, a buckler]: certain fossil crustaceans, so called from the central lobe of the head-plate projecting over the body in the form of a pointed stomacher.

ACIDS: chemical compounds distinguished by the property of combining with bases in definite proportions to form salts (q.v.). The most striking characteristics of A. are a sour taste, and the property of reddening vegetable blues. They are also mostly oxidized bodies; and at one time oxygen was thought to be essential to an acid, as the name *oxygen* (the acid-producer) indicates. Subsequent experience has extended the definition. There is an important class of undoubted A. that contain no oxygen; and *silex*, or *flint*, which, being insoluble, neither tastes sour nor reddens litmus-paper, is held to be an acid because it combines with bases and forms compounds like acknowledged A. The oxygen A., by far the most numerous class, are formed of elements (sulphur, nitrogen, chromium, etc.), with two or more equivalents of oxygen. The elements that form the strongest A. with oxygen are the non-metallic, and most of them have more than one stage of acid oxidation. Thus sulphur, with two equivalents of oxygen, forms sulphurous acid, symbol SO_2 ; with three equivalents it forms sulphuric acid, symbol SO_3 . Similarly, arsenic gives rise to arsenious acid (AsO_2) and arsenic acid (AsO_3). The higher stage of oxidation forms the stronger and more stable acid. All metals, except arsenic, that form A. with oxygen, have also, at a lower stage of oxidation, one or more oxides. To these oxygen A. must be added the organic A., composed either of carbon and oxygen, as oxalic acid (C_2O_4), or of these two along with hydrogen, as acetic acid ($\text{C}_2\text{H}_4\text{O}_2$) and formic acid (C_2HO_2). There are also A. found in animal fluids or resulting from their decomposition which contain nitrogen in addition to the three elements above named; such is uric acid ($\text{C}_{10}\text{N}_4\text{H}_4\text{O}_6$). The *hydrogen* A. are formed of hydrogen and a radical, either simple or compound. The most important of these, and the type of its class, is hydrochloric or muriatic acid (ClH); others are hydriodic (IH) and hydrocyanic A. (NC_2H). As all A., however, even oxygen

ACI REALE—ACKNOW.

A., possess acid properties—i.e., combine with bases—only when in combination with water, a new view of the constitution of **A.** is beginning to prevail, which makes hydrogen the real acidifying element in all **A.** Thus, instead of considering vitriol as a compound of sulphuric acid and water ($\text{SO}_3 + \text{HO}$), the hydrated acid is held to be the real sulphuric acid, and its rational formula to be (SO_3H) . It thus becomes analogous to hydrochloric acid (ClH). This view not only has the advantage of bringing all **A.** into one class, but also makes the theory of their combination with bases and of their capacity of saturation uniform and simple. See **CHEMISTRY**.

ACIDULATE, *v.* *ă-sîd'û-lăt* [*L. acid'ulûs*, a little sour—from *acidus*, sour]: to make slightly sour; to make moderately acid. **ACID'ULA'TING**, *imp.* **ACID'ULA'TED**, *pp.* **ACID'ULOUS**, *a.* *û-lûs*, slightly sour. **ACIDULÆ**, *n. plu.* *ă-sîd'û-lê*, mineral springs rich in carbonic acid.

ACINACEOUS, *a.* *ăs'î-nă'shûs* [*L. acinûs*, a stone or seed in a berry]: full of kernels. **ACINOSE**, *a.* *ăs'î-nôz*, also **AC'INOUS**, *a.* *-nûs*, applied to mineral textures and surfaces which have a granulated appearance like the raspberry; consisting of minute granular concretions.

ACINACIFORM, *a.* *ăs'î-n-ăs'î-fawrm* [*L. acinācēs*; *Gr. akinākēs*, a straight sword or sabre; *forma*, shape]: in *bot.*, shaped like a Turkish sword or scimitar.

ACINUS, *n.* *ăs'î-nûs*, **ACINI**, *n. plu.* *ăs'î-nî* [*L. acinûs*, a berry, or seed of a berry]: the smallest subdivision, or ultimate secreting lobule, of a gland.

ACIPENSERIDÆ, *n. plu.* *ăs'îp-ên-sēr'î-dê* [*L. acipen'ser*, the sturgeon]: the sturgeon family—a limited group of ganoid fishes; the existing species are chiefly of large size.

ACI REALE, *ă'chê rā-ă'lā*: town of Sicily, in the district of Catania; at the foot of Mount Etna, on the coast, where the small river Aci, flowing from Etna, enters the sea. The town is built of lava, is defended by a fortress. Pop. (1881), 22,431, employed chiefly in the manufacture of linen and silk; it also has considerable trade in flax and grain. Many of the edifices are very handsome. **A. R.** is famed for its mineral waters, and for the cave of Polyphemus and the grotto of Galatea in its vicinity.

ACKERMANN, *ăk'er-mân*, **RUDOLPH**: 1764–1834; *b.* Saxony in Germany: went to London, and introduced the art of lithography into England, and was the originator of the 'Annuals' (*q.v.*), which he commenced by his *Forget-me-not*, 1823 and following years. Among his numerous illustrated publications were his *Repository of Arts, Literature, and Fashions*; *Microcosm of London*; *Westminster Abbey*. English wood-engraving, water-proofing, and gas-lighting were greatly promoted by **A.**

ACKNOW, *v.* *ăk-nô* [see succeeding entry]: in *OE.*, to acknowledge; to confess; to recognize. **ACKNOW'ING**, *imp.* **ACKNOWEN**, *pp.* *ăk-nôn*.

ACKNOWLEDGE—ACNE.

ACKNOWLEDGE, v. *āk-nōl'ēj* [L. *ad*, to; and OE. *knowlechen*, to acknowledge—corrupted from OE. *aknow*; AS. *oncndāwan*, to know, to perceive—from AS. *a* for *on*, *cndāwan*; Icel. *kná*; L. *gnosco*, I know; and Icel. *leik*, like]: to own the knowledge of; to own; to confess; to admit to be true; to assent to. **ACKNOWLEDGING**, imp. **ACKNOWLEDGED**, pp. *āk-nōl'ējđ*. **ACKNOWLEDGMENT**, n. *āk-nōl'ēj-měnt*, the owning to be true; confession; the expression of thanks for a benefit received; a receipt. **ACKNOWLEDGER**, n. one who.—**SYN.** of 'acknowledge': to own; confess; avow; recognize; proclaim; admit; concede; allow;—of 'acknowledgment': admission; confession; recognition; avowal.

ACME, n. *āk'mē* [Gr. *akmē*, the point]: the highest point; the top; maturity or perfection; the height or crisis of any condition or state.

ACNE, n. *āk'nē* [Gr. contr. from *akmai*, pimples on the face]: a small hard pimple, affecting chiefly the forehead: an important skin disease. It is placed by some dermatologists in the order *Pustulæ*, and by others in the order *Tubercula*, which includes solid, hard elevations of the skin, much larger than *Papulæ*. The sebaceous follicles of the skin (q.v.) are the primary seat of the affection. Their natural secretion accumulates in their interior, and there is, at the same time, a tendency to inflammation of the follicle and surrounding tissue. It is not rare to find on the face and shoulders of young persons about or above the age of puberty a number of black spots, each of which is placed on a slightly raised pale base. These black points are called *comedones*. Pressure at the base occasions the expulsion of a little, elongated, spiral, white mass, with a black point or anterior end, commonly but erroneously regarded as a worm. In the midst of the white mass of sebaceous matter, a parasite, *Acarus folliculorum* (q.v.) is, however, often found. Interspersed are other spots, with the base more raised and inflamed, which become more or less perfect pustules, each of which rests on a comparatively large red base. In some of the inflamed follicles, coagulated lymph (to use the old phraseology) is thrown out, and a small hardened mass is the result. According as one or other of these appearances preponderates, we have different varieties of this disease. When the pustule is the most striking feature, the affection is called *Acne simplex* or *vulgaris*; when the black points abound, it is *Acne punctata*; and when there is decided induration, it is *Acne indurata*. This affection is never seen in children, and is rare in aged persons.

As long as there is no inflammation, the treatment simply aims at favoring the escape of the contents of the sebaceous follicles, by rubbing the face and other affected parts with cold cream at bedtime, washing on the next morning with soap and water, and gentle subsequent friction with a soft towel. When acute inflammation is present, and the pustules are very tender, there is no better application than tepid water, with or without a little gelatine in solution; and subsequently the ointment of the hypochlorite of sulphur has been found useful by Wilson and others. *Acne indurata*,

ACOLYTE—ACONITE.

which is the least tractable of the three forms, is sometimes benefited by the application of fly-blisters. In all these cases, the state of the digestive organs must be carefully attended to.

Acne Rosacea is, according to some writers, a much more grave variety of acne; while others regard it as a special disease, to which they assign the name of *Rosacea* (q. v.).

ACOLYTE, n. *äk'ô-lit*, also **ACOLYTH**, n. *äk'ô-lith* [mid. L. *acolythus*, a follower—from Gr. *akôlou'thêō*, I follow as a servant]: in the R. Cath. Ch., one whose duty it is to assist in the performance of religious rights, lighting the candles, attending on the officiating priest, presenting the wine and water at the communion, etc. The name occurs first about the 3d c. Acolytes were considered as in holy orders, and ranked next to sub-deacons. These services have, since the 7th c., been performed by laymen and boys, improperly called acolytes; but in the Roman Church aspirants to the priesthood are still at one stage consecrated as acolytes. See **ORDERS, HOLY. A.**, in astronomy, is an attending or companion star.

ACONCAGUA, *â-kôn-kâ'gwâ*: an extinct volcano, the highest peak of the Andes (q. v.), height 22,867 ft., about 150 m. e.n.e. of Valparaiso, on the frontier of Chili and the Argentine Republic. In 1882, its region was explored by Dr. Güssfeldt, who climbed to within 1,840 ft. of the summit.

ACONITE (*Aconitum*): a genus of plants of the natural order *Ranunculaceæ* (q. v.), having five petaloid sepals, of which the upper one is helmet-shaped, and two hammer-headed petals concealed within the helmet-shaped sepal. The fruit consists of 3-5 follicles. *A. Napellus*, the common wolf's-bane or monk's-hood, often cultivated in flower-gardens for its erect racemes of blue flowers, is a somewhat doubtful native of England, but common in some parts of Europe. The roots are fusiform and clustered. The root and whole plant are very poisonous, containing an alkaloid, called *Aconita* or *Aconitine*, one of the most virulent of all known poisons; but an extract of the leaves is a valuable medicine, administered in small doses for nervous and other diseases. An *A.*, sometimes called *A. Stoerckianum*, but generally regarded as a variety of *A. Cammarum* (also known as *A. paniculatum*), was brought into great repute on the



Monk's-hood (*Aconitum Napellus*):
a, fruit; b, root.

Continent during last century by

ACONITE—ACORUS.

Dr. Stoerck, an Austrian imperial physician, and is still much cultivated for medicinal use. The same properties seem in greater or less degree to belong to a number, if not to all, of the species of this genus, and they contain the same alkaloid. The virulent *bikh* poison of India, equally fatal in its effects whether introduced into wounds or taken into the stomach, is prepared from the roots of several species. The *A. ferox* of Nepaul, from which much of it is obtained, has been identified by Drs. Hooker and Thomson with *A. Napellus*. Two other Himalayan species, *A. palmatum* and *A. luridum*, are equally employed in its preparation. *A. album*, or white-flowered monk's-hood, a native of the Levant, and *A. lycoctonum*, yellow-flowered monk's-hood, or wolf's-bane, a native of the Alps, are frequent in flower-gardens.

ACONITE, n. *āk'ō-nit*, also ACONITUM, n. *āk'ō-ni'tūm* [L. *aconitūm*: Gr. *akonitōn*]: the herb wolf's-bane, or monk's-hood; the *Aconitum napellus*, Ord. *Ranunculacēæ*; a deadly poison extracted from it. ACONITINE, n. *ā-kōn'i-tīn*, also spelt ACONITIA, n. *āk'ōn-ish'i-ā*, the alkaloid of aconite, forming its active principle. ACONITIC, a. *āk'ōn-it'ik*, of or pertaining to.

ACONTIA, n. plu. *ā-kōn'shī-ā* [Gr. *akōntion*, a small dart, a javelin]: long filaments with thread-cells, attached to the free edges of the mesenteries of sea anemones.

ACORN, n. *ā'kawrn* [AS. *æcern*; Icel. *akarn*; Dut. *aker*, an acorn—from Icel. *akr*, a field: Goth. *akran*, fruit—from *akrs*, a field]: fruit of the field or wild country; the fruit of the oak-tree, formerly used as human food. *Note*.—*Acorn* is related etymologically neither to *oak* nor to *corn*, though the original postfix *ern* has been changed into *orn* from the mistaken notion that *æcern* meant an *oak-corn* (see Skeat).

ACORN-SHELL: see *BALANUS*.

ACORUS, n. *āk'ō-rūs* [L. *acōrūs*—from Gr. *akōrōn*]: a genus of plants of the natural order *Aroideæ* (see *ARUM*); or, according to other botanists, of the natural order *Orontiaceæ*, regarded as a connecting-link between *Aroideæ* and *Juncēæ*. The plants of this genus have a leaf-like scape, which bears upon its side a dense, cylindrical, greenish spike of flowers, with 6-partite herbaceous perianth and six stamina in each flower. To this genus belongs the sweet flag (*A. calamus*), which was long ago brought from Asia, and in the 15th c. was planted in the gardens of princes and rich men, but has now become naturalized in England, Germany, and America, growing in marshes and ditches. Its root (rhizome) is perennial, divided into long joints about the thickness of the thumb, has a bitterish acrid taste, and is very aromatic. It is a powerful medicine of transient tonic effect, occasionally used, especially in cases of weak digestion. It is cut into slices and prepared with sugar as confectionery: it is also used to correct the empyreumatic odor of spirits, and to give them a peculiar flavor. It is called *Calamus Root* by perfumers in the manufacture of hair-powder.—The other species of *A.* are likewise aromatic,

ACOSTA—ACOUSTICS.

and applied to the same uses. *A. gramineus* is cultivated in China.

ACOSTA, *á kôs'tá*, GABRIEL D': 1587-1640 (or 47); b. Oporto: a Portuguese nobleman, descended from a Jewish family. After being educated in the doctrines of the Roman Catholic Church, he became skeptical, and leaving Portugal, went to Amsterdam, where he adopted the Jewish faith, changing his name Gabriel to Uriel. He did not remain long contented with his new creed; but wrote against the Pentateuch, disputed the doctrine of the soul's immortality, and became involved in controversy with his rabbinical teachers. On account of his work, entitled *Examen de Tradições Phariseas conferidas com a ley Escripta* (Examination of Pharisaic Traditions compared with the Scriptures), 1624, he was charged with atheism by the Jews before a Christian magistracy. Having lost his property, and being sentenced to a seven years' excommunication, he sought reconciliation with the synagogue, and submitted to very ignominious chastisements, repeatedly inflicted as often as his religious doubts arose again; until, in a state of insanity, he ended his career by suicide, though of this there may be some doubt. His autobiography was published in Latin and German (Leip. 1847).

ACOTYLEDON, n. *á-kôt'í-lē' dōn* [Gr. *a*, without; *kōtū-lēdōn*, a seed-lobe]: in bot., a plant whose embryos or germs have no seed-lobes. ACOTYLEDONOUS, a. *á-kôt'í-lē' dō-nūs*, having no seed-lobes.

ACOTYLEDONOUS PLANTS (*Acotyledones* of Jussieu): one of the great primary classes into which the vegetable kingdom is divided, according to the structure of the seed and whole development therewith connected. See COTYLEDON. The class of *Acotyledones* contains those plants which, in the Linnæan system, form the class Cryptogamia (q.v.). It consists partly of *Acrogenous Plants* (q.v.), as Ferns and Mosses, and partly of *Thallogenuous Plants* (q.v.), as Lichens, Fungi, and Algæ. It thus includes the vegetable tribes of lowest organization, whose embryo exhibits no distinct seed-lobes (cotyledons), but is a mere cell or *spore*, with granular matter in its interior, and germinates indifferently from any point of its surface.

ACOUSTICS, n. plu. *á-kow'stíks* [Gr. *akous'tōs*, that may be heard—from *akouō*, I hear]: the science that treats of the cause, nature, and phenomena of sounds; remedies for deafness. ACOUSTIC, a. *-stík*, also ACOUSTICAL, a. *-stí-kāl*, relating to hearing or sound.

ACOUSTICS.

ACOUSTICS: the science of sound. This part of physics is often treated in connection with the atmosphere—an arrangement that seems inappropriate; for the atmosphere is only the most common conductor of sound; and every substance, whether solid or fluid, is capable, as well as air, of itself sounding, or of conveying the sound of other bodies. A. is rather a part of the science of motion. All motion is either rectilineal, circular, or vibratory; and when a vibratory motion is quick enough to affect the sense of hearing—for which at least thirty vibrations in a second are required—it constitutes a sound. A definable, uniform sound is a note or tone, and the rapidity of the vibrations is its pitch; a confused indeterminate sound is a noise. The chief subjects treated of in A. are: 1. Musical sounds, or notes (q.v.). Here the question is concerning the absolute and relative velocities of the vibrations, and those modifications, called temperament, to which their original proportions are subjected for the practical purposes of music. 2. The origin of sound (q.v.), and the laws which guide the vibrations of sounding bodies, and which give rise to different phenomena in different substances. In all sounding bodies, it is elasticity that is to be looked upon as the moving power. The elasticity of a sounding body may arise from stretching, as in the strings of a violin or the head of a drum; or from its own stiffness, as in rods, bells, etc. 3. The propagation of sound, as well through the air and other gases as through solids and liquids; and the reflection of sounds or echoes. All elastic bodies conduct sound, many much more powerfully than air. In water the conducting power is four times stronger than it is in air; in tin, seven times; in silver, nine times; in iron, ten times; in glass, seventeen times. 4. Perception of sound, or the structure and functions of the ear (q.v.).

The ancients made attempts to cultivate A. Pythagoras and Aristotle were aware of the way in which sound is propagated through the air; but as a science independent of its application to music, A. belongs almost entirely to modern times. Bacon and Galileo laid the foundation of this new mathematical science; Newton showed by calculation how the propagation of sound depends upon the elasticity of the atmosphere or other conducting medium. He observed that a sounding body acts by condensing the portions of air that lie next it and in the direction of the impulse. These condensed portions then spring back by their elasticity, and at the same time impel forward the portions lying next them. Each separate portion of air is thus driven forward and backward; and thus all round the sounding body there is an alternate condensation and rarefaction of air, constituting, as it were, waves of sound. In determining the velocity of sound, Newton, Lagrange, and Euler erred in their calculations; the best researches on this subject are those of Laplace. Chladni first raised A. to an independent science. In recent times comparatively little has been done in this branch of physics. Savart has determined more exactly the number of vibrations in a second necessary to produce an audible sound; and Cagniard de Latour in-

ACQUAINT—ACQUIESCE.

vented the siren, and discovered many of the conditions under which both solids and fluids sound. The sounding of heated metals, when laid on cold metallic supports, has occasioned much discussion. See *Edinb. Phil. Journal*. Faraday and Marx have examined the figures of sound; Wheatstone, the phenomena of sympathetic sounds; and Willis, the formation of vowel-sounds by the human voice.

While the principles of A. are well known in theory, they are very seldom carried to a satisfactory result in practice. Many costly assembly halls and churches are defective as regards public speaking; it being seemingly a mere chance that new edifices of this kind have proper acoustic qualities. In some cases, the sounds uttered cause echoes and reverberations, perplexing alike to a speaker and his auditory, and in others the sounds are dispersed at a high elevation and are lost. This subject urgently demands consideration with architecture. As a general rule, the ceilings of halls should be at a moderate elevation; the lowering of a ceiling and the removal of chandeliers have been known to improve the speaking and hearing properties; and the hanging up of flags and draperies, or the stretching of wires across, has in other instances had a similarly good effect. The whispering gallery in St. Paul's, London, is an interesting example of one of the phenomena in acoustics. See ECHO.

ACQUAINT, v. *äk-kwānt'* [mid. L. *accognītārē*, and *ad cognītārē*; F. *accointer*; OF. *acointer*, to make known—from L. *ad, cognītus*, known]: to make known to; to inform; to give notice of; to make familiar with. **ACQUAINT'**-**ING**, imp. **ACQUAINT'****ED**, pp. **ADJ.** familiar; well known. **ACQUAINTANCE**, n. *äk-kwānt'āns*, familiar knowledge; a person merely known, or familiar to. **ACQUAINTANCESHIP**, n. state of being acquainted; knowledge of, either intimate or but a little.—**SYN.** of 'acquaint': to inform; apprise; instruct; teach; advise; disclose; communicate; make known;—of 'acquaintance': familiarity; intimacy; knowledge; fellowship.

ACQUAVIVA, *ä'kwā-vē'vā*: town of s. Italy, in the province of Bari, 16 m. s. of the town of Bari, in a healthy situation at the foot of the Apennines. It is surrounded with walls and ditches, has a handsome parish church, several convents, two hospitals, etc. Pop. 7,600.

ACQUESTS, n. plu. *äk-kwěsts'* [F. *acquet*; OF. *acquest*, acquisition—from mid. L. *acquāsitus*]: in law, property acquired by purchase or otherwise, but not by inheritance.

ACQUI, *äk'kwī* (Lat. *Aquæ Statiellæ*): walled town of n. Italy, on the left bank of the Bormida, 18 m. from Alessandria. It derives its name from its hot sulphur springs, known to the Romans, and now much frequented by invalids. The town is of great antiquity, and contains many remarkable ecclesiastical buildings. Pop. 7,400.

ACQUIESCE, v. *äk'kwī-ēs'* [L. *acquiescērē*, to cease from activity—from *ad, quiescō*, I am quiet: F. *acquiescer*, to acquiesce: It. *acquiescere*—*lit.*, to become physically quiet]: to agree in; to rest satisfied with; to assent quietly. **AC'**-**QUIES'****CING**, imp. **ACQUIESCED**, pp. *äk'kwī-ēst'*. **AC'****QUIES'**-

ACQUIRE—ACRE.

ACQUIESCENCE, n. -*ēs'ēns* [F.]: agreement in; satisfaction with, also **AC'QUIESCENCY**, n. -*ēs'n-si*. **AC'QUIESCENT**, a. -*ēsnt*, easy; submitting; resting apparently satisfied with. To **ACQUIESCE**, to comply with, or submit to without opposition.—**SYN.** of 'acquiesce': to rest; repose; yield; accede; assent; consent; agree; coincide; conform; submit; comply; concur; accord.

ACQUIRE, v. *āk-kwīr'* [L. *acquirēre*, to procure in addition—from *ad*, *quæro*, I seek; F. *acquérir*, to acquire]: to gain; to gain possession of something as one's own, as money or knowledge; to earn or attain. **ACQUIRING**, imp. **ACQUIRED**, pp. *āk-kwīrd'*. **ADJ.** gained; not natural. **ACQUIREMENT**, n. something gained by study—as grammar, arithmetic, etc. **ACQUIRABLE**, a. -*ā-bl*, capable of being acquired.—**SYN.** of 'acquire': to obtain; gain; win; earn; attain; procure; secure; get.

ACQUISITION, n. *āk-kwī-zīsh'ūn* [F. *acquisition*, an acquisition—from L. *acquisitiōnem*—from *ad*, *quæsitus*, sought]: the act of acquiring; the thing acquired, as a good name; something gained, as property; attainment in knowledge. **ACQUISITIVE**, a. *āk-kwīz'i-tiv*, acquired or gained. **ACQUISITIVELY**, ad. -*tiv-lī*. **ACQUISITIVENESS**, n. *āk-kwīs'i-tiv-nēs*, in *phren.*, the faculty of the mind for gaining or possessing.

ACQUIT, v. *āk-kwīt'* [F. *acquitter*, to set free, to clear—from mid. L. *acquiētūrē*—from L. *ad*, *quīētūs*, kept quiet—*lit.*, to set at rest]: to clear from blame or guilt; to discharge. **ACQUITTING**, imp. **ACQUITTED**, pp. **ACQUIT'TAL**, n. a setting free; the being found not guilty. **ACQUIT'TANCE**, n. -*tāns*, a release from a debt; the writing or receipt to show this.—**SYN.** of 'acquit': to absolve; exonerate; clear; exculpate, forgive; pardon.

ACRE, n. *ā-kēr* [AS. *acer*; Ger. *acker*; Icel. *akr*, a field of cultivated land; mid. L. *acra*, a measured portion of land—from Gr. *agrōs*; L. *āgēr*; Sans. *ajra*, a field—*lit.*, as much land as can be cultivated in a day]: a portion of land. **ACREAGE**, n. *ā-kēr-āj*, the number of acres in a piece of land. **ACRED**, a. *ā-kērd*, possessing acres or land.

ACRE: a measured portion of land: the German *acker* means both 'a field' and a 'measure of land.' Most nations have some measure nearly corresponding; originally, perhaps, the quantity which one plow could plow in a day; uniformity, therefore, is not to be looked for.

The A. in the United States is the English statute A., consisting of 4,840 sq. yards. The chain with which land is measured is 22 yds. long, and a sq. chain will contain 22×22 , or 484 yds.; so that 10 sq. chains make an acre. The A. is divided into 4 roods, a rood into 40 perches, and a perch contains $30\frac{1}{2}$ sq. yds. The Scotch A. is larger than the English, and the Irish than the Scotch. 121 Ir. ac. = 196 Eng. nearly; 48 Sc. ac. = 61 Eng. The following table shows the values of the more important corresponding measures compared with the English A. or the A. in the United States. The German morgen below are becoming obsolete,

ACRE—ACRIMONIOUS.

as the German Empire has adopted the French metrical system.

English acre.....	1.00
United States acre.....	1.00
Scotch acre.....	1.27
Irish acre.....	1.62
Austria, Joch.....	1.42
Baden, Morgen or Acre.....	0.89
Belgium, Hectare (French).....	2.47
Denmark, Toende.....	5.5
France } Hectare (= 100 ares).....	2.47
} Arpent (common).....	0.99
Hamburg, Morgen.....	2.38
Hanover, ".....	0.64
Holland, ".....	2.10
Naples, Moggia.....	0.88
Poland, Morgen.....	1.88
Portugal, Geira.....	1.43
Prussia } Little Morgen.....	0.63
} Great Morgen.....	1.40
Russia, Deciatina.....	2.70
Sardinia, Giornate.....	0.98
Saxony, Morgen.....	1.86
Spain, Fanegada.....	1.06
Sweden, Tunneland.....	1.18
Switzerland, Faux.....	1.62
" Geneva, Arpent.....	1.27
Tuscany, Saccata.....	1.22
Württemberg, Morgen.....	2.40
Roman Jugerum (ancient).....	0.66
Greek Plethron (ancient).....	0.23

ACRE, *St. Jean d'* (*sǎng zhǒng dá'kér*), or **ACCA**: the Biblical *Accho*, known as *Ptolemais* in the middle ages; seaport on the coast of Syria, not far from the base of Mount Carmel. The harbor is partly choked with sand, yet is one of the best on this coast. *A.* has often been the arena of warfare, and has suffered many changes of fortune. In 1004, it was taken by the Genoese; in 1187, by the Sultan Saladin; afterward it became the chief landing-place of the Crusaders, the seat of a bishop and of the Order of St. John; next, it fell into the hands of the Egyptians; and in 1517 was captured by the Turks; in 1799, it was besieged by the French for sixty-one days, but was successfully defended by the garrison, aided by a body of English sailors and marines under Sydney Smith. In 1832, it was stormed by Ibrahim Pacha, son of the viceroy of Egypt, and continued in his possession till it was bombarded and taken, in 1840, by a combined English, Austrian, and Turkish fleet. Pop. 10-15,000. See **EGYPT**.

ACRI, *d'krì*: town of s. Italy, in the province of Cosenza, 13 m. n.e. of the town of Cosenza, in a beautiful and healthy situation, with a fertile country around. Pop. 4,500.

ACRID, a *ăk'rîd* [L. *ăcēr*, or *ăcrēm*, sharp]: hot and bitter; of a sharp or biting taste; corrosive. **AC'RIDNESS**, n., or **ACRIDITY**, n. *ăk'rîd'î-tî*, sharpness; bitterness.

ACRIMONIOUS, a. *ăk'rî-mō'nî-ūs* [L. *acrîmōnîă*, sourness—from *ăcēr*, sharp]: sharp; severe; sarcastic—applied to manner of speaking. **AC'RIMO'NIOUSNESS**, n. *-nî-ūs-nēs*, the state or quality of being acrimonious; asperity. **Ac'RIMO'NIOUSLY**, ad. *-lî*. **ACRIMONY**, n. *ăk'rî-mōn'î*, sharpness

ACRITA—ACROGEN.

or bitterness in speaking. **ACRITUDE**, n. *āk'ri-tūd*, bitterness.—**SYN.** of 'acrimony': asperity; animosity; tartness; harshness; severity; bitterness.

ACRITA, n. plu. *āk'ri-tū* [Gr. *akritos*, indistinct]: the lowest division of the animal kingdom, comprising the lowest classes of radiata, characterized by an indistinct or molecular condition of the nervous system; the Protozoa.

ACRITICAL, a. *āk'rit'ī-kāl* [Gr. *akritos*, indistinct]: applied to a disease in which no regular crisis has been indicated.

ACRITOCROMACY, *āk'ri-tō-krō'mă-sī* [Gr. *akritos* and *chromatia*, which, when associated, imply 'inability to discriminate between colors']: a term which seems likely to supersede *Color Blindness*, *Daltonism*, *Achromatopsia*, etc.

ACROAMATIC, a. *āk'rō-ă-măt'ik*, also **AC'ROAMAT'ICAL**, a. *ī-kāl* [Gr. *akroāmă*, a hearing]: originally in the Aristotelian schools applied to lectures heard by the more advanced scholars; hence, pertaining to the more obscure or deeper parts of learning; abstruse; oral.

ACROBAT, n. *āk'rō-băt* [F. *acrobate*—from Gr. *akrobătēs*, one who goes on tiptoe—from Gr. *akros*, high; *baino*, I go]: a rope-walker or dancer; a vaulter; a tumbler: one who performs difficult feats, vaulting, sliding, tumbling, and dancing on a slack or tight rope, stretched either horizontally or obliquely. These feats require great skill, suppleness, and steadiness. For a long time, acrobats were contented to divert and astonish children or the most ignorant of the populace; but the extraordinary skill of some recent performers has given this perilous art celebrity. Within the present century, Farioso, Madame Saqui, and Signor Diavolo, and especially Blondin, have been notable. The acrobats of antiquity appear to have closely resembled those of our own day.

ACROBRYA, n. plu. *āk'rō-brī'ă* [Gr. *akros*, at the highest point; *bruō*, I bud forth or germinate]: plants in which the growth is formed by additions in an upward direction.—**SYN.** of 'acrogens.'

ACROCARPI, n. plu. *āk'rō-kăr'pī* [Gr. *akros*, at the highest point; *karpos*, fruit]: mosses having their fructification terminating the axis. **ACROCARPOUS**, a. *āk'rō-kăr'pūs*, having the fructification terminating the axis.

ACROCEPHALIC, a. *āk'rō-sē-făl'ik* [Gr. *akros*, high; *kephālē*, the head]: high-headed, or pyramidal-headed—applied to the high-skulled tribes of the human family.

ACRODONTA, n. plu. *āk'rō-dm'tă* [Gr. *akros*, high; *odous* or *odonta*, a tooth]: certain fossil saurians having their teeth immovably fixed to the summit of the jaw. **ACRODUS**, n. *āk'rō-dūs*, certain fossil fish-teeth, characterized by their enamel being covered with fine grooves—known by the name of *fossil leeches*.

ACROGEN, n. *āk'rō-jěn* [Gr. *akros*, high; *gennăō*, I produce]: in bot., applied to plants which increase by growth at the summit or growing point. **ACROGENOUS**,

ACROGENOUS PLANTS—ACROLEIN.

a. *ă-kroj'ě-nūs*, increasing by growth at the summit or growing points—as the *tree ferns*.

ACROGENOUS PLANTS, *ă-kroj'ě-nūs* : plants whose stem-structure is *acrogenous*—that is, in which the vascular bundles are developed simultaneously, and not in succession, the stem increasing by the coherence of the bases of the leaves



Section of Acrogenous stem.



Tree Fern.

and by elongation at the summit. In a transverse section of the stem, a circle of vascular tissue is found near the circumference, and the centre is composed of cellular tissue, some portion of which frequently disappears, so that the stem, though solid when young, becomes hollow in a more advanced stage of its growth. Tree-ferns afford the finest specimens of the acrogenous stem. All A. P. have *stomata*, or breathing-pores, on the surface. In general, they have a distinct stem and leaves arranged with most perfect symmetry. Some plants, in which the distinct stem is absent, are ranked with A. P., because the *thallus* has the texture of leaves, and exhibits a higher organization than in *Thallogenuous Plants* (q.v.). A. P. are all *Acotyledonous* (q.v.); and under this designation are included *Ferns*, *Equisetaceæ*, *Lycopodiaceæ*, *Marsileaceæ*, *Mosses*, and *Hepaticæ*.

ACROGNATHUS, n. *ăk'rög-nă'thūs* [Gr. *akros*, high, pointed; *gnāthōs*, the jaw-bone]: a genus of fossil fishes from the lower chalk, characterized by their deep jaws.

ACROLEIN, *ăk-rō'lē-in* [L. *acer*, sharp, or Gr. *akros*, on the top, from its lightness; L. *oleūm*, oil] ($C_6H_4O_2$): a colorless, limpid, volatile, strongly refracting liquid, lighter than water, and having its boiling-point at about 125° . It constitutes the acrid principle produced by the destructive distillation of fatty bodies, and is in part due to the decomposition of glycerine. It is best prepared by distilling a mixture of glycerine and anhydrous phosphoric acid, the object of the latter being to effect the removal of the element of four atoms of water from the glycerine ($C_6H_8O_6$), which contains the elements of A. ($C_6H_4O_2$) + those of four atoms of water (H_4O_4). In its state of vapor, it is extremely irritating to the eyes, nostrils, and respiratory organs—a property to which it owes its name. The pungent smell given off by

ACROLITH—ACROPOLIS.

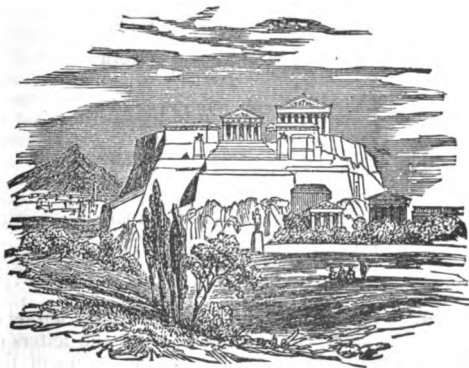
the smouldering wick of a candle just blown out is due to the presence of A. When A. is mixed with a solution of potash or soda, the irritating odor disappears, and is replaced by one of cinnamon, while a brown resinous substance is formed; and certain oxidizing agents, as oxide of silver, convert it into *acrylic acid* ($C_6H_4O_2$).

ACROLITH, n. *āk'rō-lith* [Gr. *akros*, extreme; *lithos*, a stone]: a statue having the trunk of wood and the extremities of stone; such are the oldest works of Greek plastic art, in which wood-carving is seen in transition into marble statuary. The trunk of the figure is still, in the old style, of wood, covered with the usual temple-vestments; but the extremities—head, arms, feet—which are meant to appear naked from below the drapery, are of stone. **ACROLITHAN**, a. *āk-rōl'i-thān*, pertaining to or constructed like an acrolith.

ACROMIUM, n. *āk-rō'mī-ŭm*, also **ACRO'MION**, n. *mī-ŏn* [Gr. *akros*, high, extreme; *ōmos*, a shoulder]: the projecting or outer part or process of the scapula or shoulder-blade. **ACROMIAL**, a. *āk-rō'mī-āl*, of or belonging to the acromium.

ACRONYC, a. *ā-krōn'ik*, also **ACRON'YCAL**, a. *-i-kāl* [Gr. *akros*, high, extreme; *nux* or *nukta*, night]: in *astron.*, a term applied to the stars when they either appear above or sink below the horizon at the time of sunset. **ACRON'YCALLY**, ad. *-lī*.

ACROPOLIS, n. *ā-krōp'ō-līs* [Gr. *akros*, high; *polis*, a city]: the citadel of Athens; the highest part or citadel of a city. Many of the important cities of Greece and Asia Minor were protected by strongholds so named. The A. occupied a lofty position, commanding the city and its



Acropolis of Athens.

environs; inaccessible on all sides except one, which usually had artificial defenses. It contained some of the most important public buildings, especially temples, besides affording a last refuge in case of a hostile attack. The A., like the castle of the middle ages, had formed the centre or

ACROSAURUS—ACROSTIC.

nucleus around which the town gradually grew. Among the most celebrated ancient Acropolises was that of Argos, whose name Larissa, indicates its Pelasgic origin; that of Messenia, which bore the name of Ithome; that of Thebes, called Cadmea; that of Corinth, known as Acro-Corinthus; but especially that of Athens, which was styled pre-eminently the A. See ATHENS.

ACROSAURUS, n. *āk'rō-saw'rūs* [Gr. *akros*, high; *sauros*, a lizard]; an extraordinary fossil reptile found in South Africa.

ACROSPIRE, n. *āk'rō-spīr* [Gr. *akros*, high, extreme; *speira*, a spiral line]: the shoot or sprout at the end of a germinating seed; the first sprouting leaves or 'braird' of corn. ACROSPIRED, a. *-spīrd*, having sprouts; having sprouts at both ends of the grain.

ACROSS, prep. ad. *āk'rōs'* [AS. *a*, at, on; Icel. *kross*, a cross]: from side to side; laid over something so as to cross it; denoting position beyond.

ACROSTIC, n. *āk'rōs'tīk* [Gr. *akros*, high, extreme *stichos*, a row or line], adj. pertaining to. ACROS'TICALLY, ad. *-lī*. A short succession of lines or verses, the first letters of which follow some predetermined order, usually forming a word—most frequently a name—or a phrase or sentence. Sometimes the final letters spell words as well as the initial, when the poem is called a Double A., and the peculiarity may even run down the middle of the poem like a seam. Sir John Davies composed twenty-six *Hymns to Astrea* (Queen Elizabeth), in every one of which the initial letters of the lines form the words ELISABETHA REGINA. The following is one of the twenty-six:

E v'ry night from ev'n to morn,
L ove's chorister amid the thorn
I s now so sweet a singer;
S o sweet, as for her song I scorn
A pollo's voice and finger.

B ut, nightingale, sith you delight
E ver to watch the starry night,
T ell all the stars of heaven,
H eaven never had a star so bright
A s now to earth is given.

R oyal Astrea makes our day
E ternal with her beams, nor may
G ross darkness overcome her;
I now perceive why some do write
N o country hath so short a night
A s England hath in summer.

In the A. poetry of the Hebrews the initial letters of the lines or of the stanzas were made to show the letters of the alphabet in their order. Twelve of the psalms of the Old Testament are written on this plan. The Psalm cxix. is the most remarkable. It is composed of twenty-two divisions or stanzas (corresponding to the twenty-two letters of the Hebrew alphabet), each stanza consisting of eight couplets; and the first line of each couplet in the first stanza begins, in the original Hebrew, with the letter *aleph*, in the second stanza, with *beth*, etc. The divisions of the psalm are

ACROTERION—ACT.

named each after the letter that begins the couplets, and these names have been retained in the English translation. With a view to aid the memory, it was customary at one time to compose verses on sacred subjects after the fashion of those Hebrew acrostics, the successive verses or lines beginning with the letters of the alphabet in their order. Such pieces were called *Abecedarian Hymns*. See *Hook's Church Dictionary*.

ACROTERION, *āk'ro-tē'ri-on* (Gr., the summit or extremity) in Architecture: a statue or other ornament placed on the apex or at one of the lower angles of a pediment. Some understand by A., the pedestal on which such ornament stands.

ACROTIC, a. *ā-krōt'ik* [Gr. *akros*, extreme, high]: pertaining to or affecting the external surface.

ACRYLIC, a. *ā-kri'lik* [a word formed from *acrolein*, which see]: in *chem.*, denoting an acid in the form of a colorless liquid having a slightly empyreumatic odor, produced by oxidation of acrolein; denoting a colorless pungent liquid—also called *allylic alcohol*: acrylic aldehyde = acrolein.

ACT, n. *ākt*, **Acts**, n. plu. *āks* [F. *acte*, an action—from L. *actus*, an act]: something done; a deed; a doing; power exerted; an exploit; a decree or law; one of the principal divisions of a play. V. to do; to exert power; to perform. **ACT'ING**, imp. **ACT'ED**, pp. **ADJ.** feigned; false. **ACTION**, n. *āk'shūn* [F.—L.]: the state of acting or moving; force exerted by one body on another; a deed; a battle; a process at law for the remedy of a wrong, or the establishment of a right; gesture. **ACTIONABLE**, a. *āk'shūn-ā-bl*, something in word or deed that may be carried to a court of law. **ACT'IONABLY**, ad. *-bli*, in a manner that may subject to an action at law. **ACT'IONIST**, n. one who. **ACT'IONLESS**, a. *-lēś*, dull; slothful; torpid. **ACTIVE**, a. *āk'tiv* [F. *actif*—from L. *activus*]: nimble, lively; not dull. **ACT'IVELY**, ad. *-li*, in an active manner; nimbly. **ACTIVITY**, n. *āk-tiv'i-ti*, nimbleness; the habit of diligence. **ACTOR**, n. *āk'tēr*, he that acts or performs; a stage-player—fem. **ACTRESS**. **ACTUAL**, a. *āk'tū-āl* [L. *actualis*]: real; what truly exists. **ACT'UALLY**, ad. *-li*, in effect; really. **ACTUALITY**, n. *āk'tū-āl'i-ti*, reality. **ACTUALIZE**, v. *āk'tū-āl-iz'*, to realize; to make actual. **ACT'UALIZ'ING**, imp. **ACTUALIZED**, pp. *āk'tū-āl-izd'*. **ACTUATE**, v. *āk'tū-āt*, to move, to incite to action. **ACT'UATING**, imp. **ACT'UATED**, pp. **ACTUA-TION**, n. *āk'tū-ā'shūn*, the bringing into action; operation. **TO ACT UP TO**, to fulfil, as an engagement or promise. **ACT OF FAITH**, in Spain and Portugal, formerly the burning of Jews and heretics on account of their religion; an *auto-da-fé*. **ACT OF GOD**, any action or event, generally hurtful or calamitous, beyond human control or precaution. **ACT OF CONGRESS**, any statute or law passed by both the Senate and the House of Representatives, and then sanctioned by the signature of the President. **ACT OF PARLIAMENT**, any statute, law, or edict made by both Houses of Parliament, and sanctioned by the sovereign. **ACTS OF SEDERUNT**,

ACT.

sē-dē'rūnt, rules and regulations agreed upon by judges of the Supreme Court of Scotland, *sitting in session*, and issued by them as orders for regulating the forms and procedure in the administration of justice. **ACTION SERMON**, in *Scot.*, a sermon or address delivered to communicants immediately before the administration of the Communion or Lord's Supper.—**ACTUAL CAUTERY**, in *med.*, a red-hot iron, or fire itself, as opposed to caustic chemicals.—**SYN.** of 'act, v.': to do; make; work; operate;—of 'action': an act; work; operation; deed; battle; gesture; gesticulation; posture; attitude; agency;—of 'active': diligent, industrious; laborious; brisk; agile; nimble; busy; officious; assiduous; sedulous; alert; vigorous; lively; quick; sprightly; prompt;—of 'activity': alertness; agility; nimbleness; quickness; liveliness; briskness; energy;—of 'actor': player; performer; agent;—of 'actual': real; positive; certain; true; veritable; genuine;—of 'actuate': to impel; induce; move; incite; animate; rouse; instigate.

ACT, in the Drama: a distinct part of the general plot or action, whose end is usually marked by a fall of the curtain. An act should be, in a certain sense, complete in itself, and at the same time should form a necessary part of the whole drama. As every dramatic plot naturally divides itself into three parts—the exposition, the development and the conclusion or catastrophe—a division into three acts would seem most natural; but in practice it has been found inconvenient to enclose extended plots in such limits, and since the time of the ancient Greek tragedy, *five* acts have generally been considered necessary. In the first act the general nature of the drama is indicated, the characters are introduced, and the action commences. The plot should rise in interest in the second, and reach its climax in the third act. In the fourth act, the conclusion or catastrophe should be prepared, but should by no means be anticipated so as to weaken the effect of the *dénouement*, which must occupy the fifth act. This is not an easy task; accordingly, many dramas fail in the fourth act.

ACT, in the British University sense: an exercise preparatory to receiving a degree. The student who 'keeps the Act,' and who is called the 'Respondent,' reads a Latin thesis on some proposition which he has announced that he is to maintain. Three other students who have been named by the Proctor as 'Opponents,' then try, one after another, to refute his arguments syllogistically in Latin. The practice of keeping acts is still adhered to, as a form at least, at Cambridge.

ACT, in Law: a term with various meanings. In its more general acceptation it is used to denote the solemn accomplishment of some distinctive proceeding. By an *A.* is sometimes meant an act or proceeding, or rather the record of an act or proceeding, of a public nature—and in this sense it is used when we speak of an *A. of Congress*, or an *A. of Parliament*. This use of the word appears to be derived from the Romans, who employed *Acta* to signify specially public official transactions, and oftener perhaps the records

ACT OF BANKRUPTCY.

of such transactions. The *Acta Diurna* was a kind of official Roman gazette, giving an account of the public transactions and events of the day. The Germans use *Acten*, and the French *Actes*, to signify official or legal documents, or papers generally. The title *Acta* has been applied in modern times to the journals or records of learned societies: *Acta Societatis Regiæ*—the Transactions of the Royal Society. *Acta Eruditorum*, the oldest journal of erudition in Germany, was begun at Leipsic, 1680, and ceased publication, 1782, when it had extended to 117 quarto vols. To these may be added (showing the close connection between the Roman and Scotch legal institutions and their phraseology) the *Acta Auditorum*, or the records of the proceedings of the lords auditors, who were a committee of the old Scotch parliament appointed to hear causes, by way of appeal, and otherwise to exercise supreme jurisdiction: also the *Acta Dominorum Concilii*, or ancient records of the supreme court in Scotland.

But the word *A.* has at the present day several precise legal applications, the principal of which are as follows:

ACT OF BANKRUPTCY: any act which renders a person liable to be proceeded against as a bankrupt. Such acts are enumerated by the law of the United States, as follows: 1. Departure from the state, district, or territory of which one is an inhabitant, with intent to defraud his creditors, or, being absent, remaining absent with such intent: 2. Concealment with the purpose of avoiding the service of legal process in any action for the recovery of a debt or demand provable in bankruptcy: 3. Concealment or removal of property to avoid its being taken, attached, or sequestered on legal process: 4. The assignment, gift, sale, conveyance, or transfer, of estate, property, rights, or credits, either within the United States or elsewhere with intent to delay, defraud, or hinder creditors: 5. The fact of having been arrested and held in custody under any process or execution issued out of any court of any state, district, or territory within which the debtor in question resides or has property, founded upon a demand provable against the estate of a bankrupt, and for a sum exceeding one hundred dollars, if such process have not been discharged by payment or in some other legal manner: 6. The having been actually imprisoned for more than seven days in a civil action founded on contract for the sum of one hundred dollars or upward: 7. The act of a person, who, being bankrupt or insolvent, or in contemplation of bankruptcy or insolvency, makes any payment, gift, grant, sale, conveyance, or transfer of money or other property, estate, rights, or credits; or gives any warrant to confess judgment; or procures or suffers his property to be taken on legal process, with intent to give a preference to one or more of his creditors, or to any person or persons who are or may be liable for him as indorsers, bail, sureties, or otherwise, or with the intent, by such disposition of his property, to defeat or delay the action of the law: 8. The act of any banker, broker, merchant, trader, manufacturer, or miner, who has fraudulently stopped payment, or who has stopped or suspended and not resumed

ACT OF CONGRESS—ACT OF GOD.

payment of his commercial paper within a period of fourteen days. Such a person having committed any of the above enumerated acts, is deemed to have committed an A., and is liable to be adjudged a bankrupt, and if so adjudged, the assignee may recover the money or other property so paid, conveyed, sold, assigned, or transferred, provided the person receiving such payment or conveyance had reasonable cause to believe that a fraud was intended, and that the debtor was insolvent, and such creditor shall not be allowed to prove his debt in bankruptcy. See **INSOLVENCY**.

ACT OF CONGRESS : any bill which has been laid before and passed by both houses of the congress of the United States : when such a bill has been approved and signed by the president, it becomes the law. In passing bills introduced into either the senate or house of representatives, one day's notice of a motion for leave to bring in a bill, in cases of a general nature, is required ; every bill must have three readings before it is passed, these readings to be on different days ; and no bill can be committed and amended until it has been twice read. In the house of representatives, after a bill is twice read, it is committed to the committee of the whole house, when a chairman of the committee is appointed by the speaker, who then leaves the chair and takes part in the debate like an ordinary member. When a bill has passed one house it goes to the other, where the same formalities are observed, though the senate is less strict in this regard than the lower house, and bills are often submitted to a select committee chosen by ballot. If a bill be altered or amended in the house to which it is transmitted, it is returned to the house in which it originated, and if the two houses cannot agree upon it, they jointly appoint a conference committee to confer on the subject. When a bill is engrossed and has passed both houses, it is sent to the president for his approval. If he approve of the bill he signs it ; if he do not, it is returned with his objections to the house in which it originated, and that house enters the objections at large upon its journal and proceeds to reconsider the bill. If, after such reconsideration, two-thirds of the house agree to pass the bill, it is sent, together with the objections, to the other house, by which it is likewise reconsidered, and if approved by two-thirds of that house, it becomes a law. But in all such cases the votes of both houses are determined by yeas and nays, and the names of the persons voting for and against the bill are to be entered on the journal of each house respectively. If any bill shall not be returned by the president within ten days (Sundays excepted) after it shall have been presented to him, the same becomes a law, precisely as if he had signed it, unless congress by adjournment prevent its return, in which case it does not become a law.

ACT OF GOD is a legal expression, and signifies any natural or accidental occurrence, not caused by human negligence or intervention ; such as the consequences arising from storms, lightning, tempests, etc., and which are deemed fatalities and losses such as no party under any circumstances

ACT OF PARLIAMENT.

(independently of special contract) is bound to make good to another. It has been ruled in England that the loss must be immediate, and the necessary consequence of the accident.

ACT OF PARLIAMENT: a resolution or law passed by all the three branches of the legislature—the king [or queen], lords, and commons. The expression is generally used to signify the *record* of an A. of P., and such records are strictly synonymous with the term 'statutes' or 'statutes of the realm.' An A. of P. thus made is the highest legal authority acknowledged by the constitution. It binds every subject in the land, and even the sovereign himself, if named therein. And in England it cannot be altered, amended, dispensed with, suspended, or repealed, but in the same forms and by the same authority of parliament; though in Scotland a statute may become obsolete by disuse, and cease to be legally binding. It was formerly held in England that the king might in many cases dispense with penal statutes; but by the statute 1 W. and M. st. 2, c. 2, it is declared that the suspending or dispensing with laws by royal authority, without consent of parliament, is illegal.

An A. of P. or statute is either *public* or *private*. A public act regards the whole community, but the operation of a private act is confined to particular persons and private concerns, and some private acts are *local*, as affecting certain places only. However, by the 13 and 14 Vict. c. 21, s. 7, every act made after the then next session of parliament is to be taken to be a public one, and judicially noticed as such, unless the contrary be expressly declared.

Acts of P. are also sometimes described as *declaratory*, or *penal*, or *remedial*, according to the nature of their object or provisions. Declaratory statutes are where the old custom of the kingdom has almost fallen into disuse, or become disputable, in which case the parliament has thought proper (*in perpetuum rei testimonium*, and for avoiding all doubts, and difficulties) to declare what the common law is and ever has been. Penal acts are those which merely impose penalties or punishments for an offense, as in the case of the statutes relative to game. Remedial acts are such as supply some defect in the existing law, and redress some abuse or inconvenience with which it is found to be attended, without introducing any provision of a penal character. There is also a distinction of Acts of P. as being either *enlarging* or *restraining*, *enabling* or *disabling* acts.

An A. of P. begins to operate from the time when it receives the royal assent, unless some other time be fixed for the purpose by the act itself. British statutes require no formal promulgation; and in order to fix the time from which they shall become binding, it was enacted by the 33 Geo. III. c. 13, that every A. of P. to be passed after 1793, Apr. 8, shall commence from the date of the indorsement by the clerk of parliament, stating the day, month, and year when the act was passed and received the royal assent, unless the commencement shall, in the act itself, be otherwise provided for.

An A. of P. consists of various parts—such as the title,

ACTS OF SEDERUNT—ACT OF SETTLEMENT.

the preamble, the enacting sections and clauses, and sometimes certain forms or schedules added by way of appendix—and it is referred to by the year of the sovereign's reign, and the chapter of the statutes for that year. See STATUTES: SCOTCH STATUTES: PARLIAMENT.

ACTS OF SEDERUNT, *-sē-dē'rūnt*: ordinances of the court of session or supreme civil court in Scotland, made originally under authority of the Scotch Act 1540, c. 93, whereby the judges are empowered to make such rules or ordinances as may be necessary for the regulation of legal procedure and the expediting of justice. For upwards of a century and a half, they have been almost exclusively confined to the regulation of judicial procedure, and to matters therewith connected. In several recent statutes, express power is given to the court of session to pass A. of S., for carrying the purpose of the legislature into more complete effect; and it is usually provided that the A. of S. made in virtue of such power shall be laid before parliament within a limited time. The old quorum of nine judges is requisite in passing an Act of S., 48 Geo. III. c. 151, s. 11.

ACT OF SETTLEMENT in Great Britain: the statute 12 and 13 Will. III. c. 2, by which the crown was limited to the family of her present Majesty, Queen Victoria. It was towards the end of King William III.'s reign, when all hopes of other issue died with the Duke of Gloucester, that, according to Blackstone, the king and parliament thought it necessary again to exert their power of limiting and appointing the succession, in order to prevent another vacancy of the throne, which must have ensued upon their deaths, as no further provision was made at the Revolution than for the issue of Queen Mary, Queen Anne, and King William. The parliament had previously, by the statute of 1 W. and M. st. 2, c. 2, enacted, that every person who should be reconciled to, or hold communion with, the see of Rome, should profess the Roman Catholic religion, or should marry a Roman Catholic, should be excluded from succession to, and be forever incapable to inherit, possess, or enjoy the crown; and that in such case the people should be absolved from their allegiance, and the crown should descend to such persons, being Protestants, as would have inherited the same, if the person so reconciled, holding communion, professing or marrying, were naturally dead. To act, therefore, consistently with themselves, and, at the same time, pay as much regard to the old hereditary line as their former resolutions would admit, they turned their eyes on the Princess Sophia, Electress and Duchess-dowager of Hanover; for upon the impending extinction of the Protestant posterity of Charles I., the old law of regal descent directed them to recur to the descendants of James I.; and the Princess Sophia, being the youngest daughter of Elizabeth, Queen of Bohemia, who was the daughter of James I., was the nearest of the ancient blood-royal not incapacitated by professing the Roman Catholic religion. On her, therefore, and the heirs of her body, being Protestants, the remainder of the crown expectant on the death of King

ACT OF TOLERATION.

William and Queen Anne without issue, was settled by statute 12 and 13 Will. III. c. 2. At the same time it was enacted, that whosoever should thereafter come to the possession of the crown, should join in the communion of the Church of England as by law established.

This is the last limitation of the crown that has been made by parliament; and the several actual limitations, from the time of Henry IV. to the present, clearly prove the power of the king and parliament to remodel or alter the succession. It is even made highly penal to dispute such power, for by the statute 6 Anne, c. 7, it is enacted, that if any person maliciously, advisedly, and directly, shall maintain by writing or printing, that the kings of this realm, with the authority of parliament, are not able to make laws to bind the crown and the descent thereof, he shall be guilty of high treason; or if he maintain the same by only preaching or advised speaking, he shall incur the penalties of *præmunire*.

The Princess Sophia dying before Queen Anne, the inheritance, thus limited, descended on her son and heir, King George I.; and having, on the death of the queen, taken effect in his person, from him it descended to King George II.; from him to his grandson and heir, King George III.; from him to his son, George IV., who was succeeded by his brother, William IV.; and from the monarch last mentioned the crown descended to his heiress, the daughter of his brother Edward, Duke of Kent, the present sovereign, Queen Victoria.

‘Hence,’ Blackstone remarks, ‘it is easy to collect that the title to the crown is at present hereditary, though not quite so absolutely hereditary as formerly; and the common stock or ancestor from whom the descent must be derived, is also different. Formerly, the common stock was King Egbert, afterwards William the Conqueror, and now it is Princess Sophia, in whom the inheritance was vested by the new king and parliament. Formerly, the descent was absolute, and the crown went to the next heir without any restriction; but now, upon the new settlement, the inheritance is conditional; being limited to such heirs only of the body of the Princess Sophia as are Protestants, members of the Church of England, and are married to none but Protestants.’

ACT OF TOLERATION is the name commonly given to the act of parliament 1 William and Mary, statute 1, c. 18, confirmed by 10 Anne, c. 2, by which all persons dissenting from the Church of England (except Roman Catholics and persons denying the Trinity) were relieved from such of the acts against nonconformists as prevented their assembling for religious worship according to their own forms, or otherwise restrained their religious liberty, on condition of their taking the oaths of allegiance and supremacy, and subscribing a declaration against transubstantiation; and in the case of dissenting ministers, subscribing also to certain of the Thirty-nine Articles. The clause of this act which excepted persons denying the Trinity from the benefits of its enactments, was repealed by 53 Geo. III. c. 160.

The Protestant dissenters, however, still remained, not-

ACT OF UNIFORMITY.

withstanding these provisions, subject to the obligation imposed by the Test and Corporation Acts (q.v.) on all those who were admitted to any office, of taking the sacrament of the Lord's Supper according to the rites of the Church of England; but this disability was at length removed by the 9 Geo. IV. c. 17. And to this list of concessions is now to be added the act of 15 and 16 Vict. c. 36, allowing the dissenters to certify their places of worship to, and register them with, the registrar-general of births, deaths, and marriages, instead of the archbishop, bishop, or court of quarter-sessions.

These various Acts of T. operated, however, to the exclusive benefit of *Protestant* dissenters, and afforded no relief to Roman Catholics. With respect to the latter, the progress of emancipation was more reluctant. By statutes, however, of 18 Geo. III. c. 60, 31 Geo. III. c. 32, and 43 Geo. III. c. 30, most of the severer penalties and disabilities to which they were formerly subject, were removed; and by 10 Geo. IV. c. 7, commonly called the Catholic Emancipation Act, Roman Catholics were restored in general to the full enjoyments of all civil rights, being only excluded from holding ecclesiastical offices, and certain high appointments in the state. By another act of the 2 and 3 Will. IV. c. 115, it was provided that Roman Catholics should be subject in this particular to the same laws as were applicable to Protestant dissenters; the effect of which provision is to empower them to acquire and hold property for such purposes. And now, by the acts of 7 and 8 Vict. c. 102, 9 and 10 Vict. c. 59, and 21 and 22 Vict. c. 48, Roman Catholics and Jews are relieved from all enactments calculated to oppress them.

In Scotland, toleration in religious matters is secured by various old Scotch statutes passed before the union with England, particularly by the act 1690, c. 27; and this was followed up after the union by the British statute 10 Anne, c. 7, s. 5, which declares that 'it shall be free and lawful for all the subjects in that part of Great Britain called Scotland to assemble and meet together for divine service without any disturbance; and to settle their congregations in what forms or places they shall think fit to choose, except parish churches;' an enactment which amounts to a legal recognition of dissenters, if, indeed, it may not be called their charter in Scotland.

ACT OF UNIFORMITY: name usually given to the statute 13 and 14 Car. II. c. 4. By that statute it was enacted, that the Book of Common Prayer, as then recently revised, should be used in every parish church and other place of public worship in England, and that every schoolmaster and person instructing youth should subscribe a declaration of conformity to the Liturgy, and also to the effect of the oath and declaration mentioned in the act of 13 Car. II. st. 2, c. 1. It further enacted that no person should thenceforth be capable of holding any ecclesiastical promotion or dignity, or of consecrating or administering the sacrament, till he should be ordained priest according to episcopal ordination, and with respect to all ministers who then enjoyed any ecclesiastical benefice, it directed that they should, within a cer-

ACTÆON—ACTRA.

tain period, openly read morning and evening service, according to the Book of Common Prayer, and declare before the congregation their unfeigned assent and consent to the use of all things therein contained, upon pain of being *ipso facto* deprived of their spiritual promotions. By this statute, 2,000 of the clergy, who refused to comply with its provisions, were deprived of their preferments. This statute also contained a regulation that no schoolmaster in a private house should instruct youth without having obtained a license from the ordinary; but this regulation was repealed by 9 and 10 Vict. c. 59.

ACTÆON, *āk-tē'on*: a mythical personage, grandson of Cadmus: trained as a hunter by Chiron. Having once surprised Diana while bathing in a fountain, he was changed by the offended goddess into a stag, and his own dogs, not knowing him, tore him in pieces. According to Euripides, Diana was jealous because A. had boasted that he had excelled her in hunting.

ACTA SANCTORUM or **MARTYRUM**, *āk'tā sank-tō-rūm, mār'tūr-ūm* (Acts of Saints or Martyrs): collective title given to several old writings, respecting saints and martyrs, in the Greek and Roman Catholic churches, but now applied especially to one extensive collection begun by the Jesuits in the 17th c., and intended as a better arrangement of the materials found in ancient works. This great undertaking, commenced by the Jesuit, Heribert Rosweyd of Antwerp, has importance, not only in a religious and ecclesiastical point of view, but also with regard to history and archæology. After Rosweyd's death, 1629, J. Bowland was commissioned by the order of Jesuits to continue the work; and with the assistance of G. Henschen, he prepared two volumes, which appeared, 1643. After the death of this editor, 1665, the work was carried on by a society of learned Jesuits, who were styled 'Bollandists,' until 1794, when its further progress was prevented through the invasion of Holland by the French. The lives, which are arranged in the order of the calendar, had at that time reached the middle of October, so that the great work was approaching completion. In 1837 the undertaking was resumed; and, 1846, the 54th volume was published at Brussels. A new edition of the first 54 vols., with 6 vols. of the continuation, appeared, 1863-67. At present, 63 vols. have appeared, with an Index (1875). See **SAINTS**.

ACTEA, n. *āk-tē'ā*, or **ACTÆA RACEMOSA**, *āk-tē'ā rās'ē-mōz'ā* [Gr. *aktaia*, the elder-tree: L. *racēmōsus*, full of clusters, clustering]: in *med.*, the black snake-root, black cohosh or bugbane, used in domestic practice in coughs; Ord. *Ranunculacæa*; a sedative used in rheumatism.

ACTEA: a genus of plants of the natural order *Ranunculaceæ* (q.v.), the type of the sub-order *Actææ*, distinguished by the colored imbricated calyx and indehiscent succulent fruit. The genus *Actæa* has four deciduous sepals, four petals, and a single baccate carpel. *A. spicata*, the Baneberry or Herb Christopher, is a native of the n.

ACTEOSAURUS—ACTINIA.

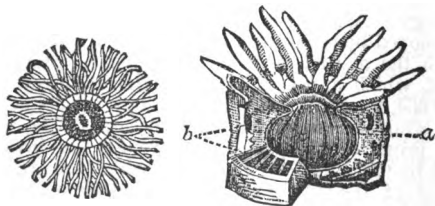
of Europe, found in bushy places in some parts of England. It is a perennial herbaceous plant, about 1-2 ft. high, with triternate leaves, and the leaflets deeply cut and serrated, the flowers in racemes, the berries black and poisonous. The root is anti-spasmodic, expectorant, and astringent, and sometimes useful in catarrh. *Botrophis actaeoides* (*Actaea racemosa* of Linnæus) is a native of the United States, whose roots are said to possess similar qualities, and are also reputed as a remedy for the bite of the rattlesnake.

ACTEOSAURUS, n. *ăk'tě-ô-saw'rŭs* [Gr. *aktē*, the sea-shore; *sauros*, a lizard]: a fossil lizard-like animal of the chalk period having very small extremities.

ACTIAN GAMES: see **ACTIUM**.

ACTINENCHYMA, *ăk'tin-ěng'kīm-ă* [Gr. *aktin*, a ray; *engchŭmă*, juice, the substance of organs]: in *bot.*, cellular tissue having a star-like or stellate form; stellate parenchyma. plu. **ACTINLÆ**, *ăk-tin'î-ē*.

ACTINIA, n. *ăk-tin'î-ă* [Gr. *aktin*, a ray]: a genus of marine animals, belonging to the sub-kingdom *Cœlenterata* (see **SUB-KINGDOMS, ANIMAL**), and to the class *Actinozoa*, of which latter group the genus is thoroughly typical. The animals included in this genus are familiarly known as 'Sea-Anemones.' They are found attached by their bases to rocks and stones, and present the appearance of cylindrical fleshy bodies, possessing a mouth surrounded by numerous tentacles at the free extremity. These tentacles in the genus *Actinia* are of simple, tubular conformation.



Actinia seen from above.

Section of Actinia :
a, cavity of stomach ; b, surrounding chambers.

They are perforated at their tips, and also possess sucker-like disks. The mouth leads into a stomach-sac, which (as in all *Cœlenterate* animals) communicates freely below with the general body-cavity, and thus comes to resemble a pocket with the bottom cut out. The stomach-sac is kept in its place by a series of vertical radiating plates, named *lamellæ* or *mesenteries*, to the faces of which the reproductive organs are attached. The *Actiniadæ* are capable of slow movements by expanding and contracting the muscular bases of their bodies. They may be cut and divided in various ways, with the result of producing new individuals by *artificial fission*. Some species may attain a great age, as proved by the well-known case of a common *Actinia* (*A. mesembryanthemum*), which, taken from the Firth of Forth

ACTINISM—ACTION.

by Sir John G. Dalryell, 1823, made a public appearance at the Fisheries Exhibition at Edinburgh, 1882. This remarkable animal—'Grannie' by name—has at various times given birth to numerous young; and as more than one of her progeny have in turn become parents, her cognomen is not merely complimentary. See ANEMONE, SEA.

ACTINISM, n. *ăk'tîn-izm* [Gr. *aktin*, a ray]: the chemical property of light, as the sun's rays in photography. **ACTIN'IC**, a. *-îk*, pertaining to. **ACTINIFORM**, a. *-î-fawrm* [L. *forma*, shape]: resembling a ray. **ACTINOGRAMS**, n. plu. *ăc-tîn'ô-grăms* [Gr. *gramma*, a letter]: the results recorded by the actinograph. **ACTINOGRAPH**, n. *ăk-tîn'ô-grăf* [Gr. *grapho*, I write]: an instrument for recording the quantity of actinism present. **ACTINOGRAPHY**, n. *-răf-î*, a description of the rays of light.

ACTINISM: the property of the sun's rays which produces chemical changes: see SPECTRUM.

ACTINOCARPOUS, a. *ăk'tîn-ô-kăr'pûs* [Gr. *aktin*, a ray; *karpos*, fruit]: having trophosperms radiated like the rays of star-fruit.

ACTINOCRINUS, n. *ăk'tîn-ôk'rî-nûs*, also **ACTINOCRINITE**, n. *ăk'tîn-ôk'rî-nîl* [Gr. *aktin*, a ray; *krinon*, a lily] a genus of encrinites characterized by the thorn-like side-arms which project from the main column.

ACTINOID, a. *ăk'tîn-ôyd* [Gr. *aktin*, a ray; *eidos*, resemblance]: resembling a ray. **ACTINOLOGY**, n. *ăk'tîn-ô-lô-jî* [Gr. *logos*, discourse]: the doctrine of the rays of light.

ACTINOLITE, n. *ăk-tîn'ô lit* [Gr. *aktin*, a ray; *lithos*, a stone]: a mineral composed of radiating or thorn-like crystals of a green or greenish-gray color; the glassy and fibrous varieties of hornblende; also **ACTINOTE**, n. *ăk'tîn-ôt*.

ACTINOMERES, n. plu. *ăk'tîn-ôm'er-êz* [Gr. *aktin*, a ray; *meros*, a part]: the lobes mapped out on the surface of the body of the Ctenophora, by the ctenophores or comb-like rows of cilia.

ACTINOMETER, n. *ăk'tîn-ôm'ê-têr* [Gr. *aktin*, a ray; *metron*, a measure]: an instrument for measuring at any instant the direct heating power of the solar rays.

ACTINOSOMA, n. *ăk'tîn-ô-sô'mă* [Gr. *aktin*, a ray; *soma*, a body]: the entire body of any actinozoön, whether simple, as in the sea-anemones, or composed of several zoöids, as in most corals. **ACTINOZOON**, n. *ăk'tîn-ô-zô'ôn*. **ACTINOZO'Ä**, n. plu. *-zô'ă* [Gr. *zôön*, an animal]: the division of the Cœlenterata, of which the sea-anemones and corals are the type.

ACTINOTROCHA, n. plu. *ăk'tîn-ô-trô'kă* [Gr. *aktin*, a ray; *trochos*, a wheel]: that form of invertebrate larva, seen in such as the Annelides, in which exist a circlet of cilia round the anterior extremity.

ACTION, in Law: in its general sense, a judicial proceeding before a competent tribunal for the attainment of justice; and in this sense it is applied to procedure, whether

ACTIONARY—ACTIUM.

criminal or *civil*. In its more limited acceptation, it is used to signify proceedings in the *civil* courts, where it means the form prescribed by law for the recovery of a right, or what is one's due.

A criminal A. is a prosecution in a court of justice, in the name of the government, against one or more individuals accused of crime. A civil A. is a legal demand of one's right, or it is the form given by law for the recovery of that which is due. An A. is real or personal, according as realty or personalty is recovered; not according to the nature of the defense. Real actions are those brought for the specific recovery of lands, tenements, or hereditaments. Personal actions are those brought for the specific recovery of goods and chattels; or, for damages or other redress for breach of contract, or other injuries, of whatever description. Mixed actions participate both of personal and real actions. Such are the actions of partition, and to compel parties to put down boundaries or landmarks. See COMMON LAW, COURTS OF, and EQUITY.

ACTIONARY, n. *ăk'shŭn-ēr'ī* [F. *actionnaire*—from L. *actiōnem*, an action—from L. *actus*, done]: the owner of shares in French or Continental companies; a shareholder.

ACTIUM, *ak'shĭ-ŭm*, now AZIO, *ăd'zē-ō*: town and promontory on the w. coast of Greece, at the entrance of the Ambraciot bay, now the Gulf of Arta: memorable for the sea-fight near it, 31 B.C., Sep. 2, between Octavianus (afterwards the Emperor Augustus) and Marcus Antonius. These two had for some time ruled the Roman world between them—the former in the west, the latter in the east; it now came to a struggle for the sole sovereignty. The two armies were encamped on the opposite shores of the gulf: Octavian had 80,000 infantry, 12,000 cavalry, and 260 ships of war; Antony, 100,000 infantry, 12,000 cavalry, and 220 ships. Antony's ships were large, and well provided with engines for throwing missiles, but clumsy in their movements; Octavian's were smaller and more agile. Antony was supported by Cleopatra, Queen of Egypt, with sixty vessels, who induced him, against the opinion of his most experienced generals, to determine upon a naval engagement. The battle continued for some hours undecided; at last, Agrippa, who commanded Octavian's fleet, succeeded, by a skillful maneuver, in compelling Antony to extend his line of battle, whose compactness had hitherto resisted all attempts of the enemy to break through. Cleopatra, whose ships were stationed behind Antony's line, apprehensive of that line being broken, took to flight with her auxiliary fleet, and Antony recklessly followed her with a few of his ships. The deserted fleet continued to resist bravely for some time, but was finally vanquished; the land-army, after waiting in vain seven days for Antony's return, surrendered to Octavian. As a memorial of the victory that had given him the empire of the world, and out of gratitude to the gods, Octavian enlarged the temple of Apollo at A., dedicated the trophies he had taken, and instituted games to be celebrated every five years. He also built, on the spot where his army had

ACTON—ACULEATE.

been encamped, the splendid city of Nicopolis (city of victory), near where Prevesa now stands.

ACTON, *ák-tôn'*, JOHN FRANCIS EDWARD: prime-minister of Ferdinand IV. of Naples: 1736-1811; b. Besançon, d. Palermo: son of a physician. After serving in the Tuscan navy, he entered the Neapolitan service, and became the favorite of Queen Caroline. His anti-French measures were cruel and intolerant, and ultimately caused a popular reaction against the royal family of Naples. A. was removed from power, on the demand of France, 1804. In 1791 he had succeeded to an English baronetcy. He is often confounded with his brother Joseph, also in the Neapolitan service, whose daughter he married, by a papal dispensation.

ACTS OF THE APOSTLES, the fifth book in the New Testament, often quoted by the early Christian writers, and never ascribed to any other writer than the Evangelist Luke. Beginning with the ascension of Christ, it gives an account of the spread of the Christian Church; confined, however, chiefly to the part taken by the Apostle Paul. Notwithstanding its title, little is said of the other apostles, with the exception of Peter. The narrative closes with the year 62, Paul being then a prisoner at Rome. The book has always been received as canonical, except by a few Manichæan heretics; though its historical character has been impugned by a few modern writers. Spurious Acts were put in circulation by early Christian sects.

ACTS, TEST AND CORPORATION: see **TEST ACTS**.

ACTUAL, ACTUALIZE, ACTUATE, ACTUATION, etc.: see under **ACT**.

ACTUARY, n. *ák'tū-ér'ī* [mid. Lat. *actuārius*, one who writes deeds, a clerk—from L. *actus*, done]: one who specially deals with the calculations of probabilities; a notary. The *Actuarii*, in ancient Rome, were clerks who recorded the *Acta* of the senate and other public bodies. The term might, therefore, so far as its etymology is concerned, be applied to men of business in general. But in the constantly increasing tendency to subdivide labor and specialize functions, there has arisen, in recent times, a distinct branch of business, embracing all monetary questions that involve a consideration of the separate or combined effect of Interest and Probability, especially as connected with the duration of human life; and it is to one who is officially busied in this department that the name has been specially assigned. The investigations and calculations of the A. supply the principles of operation for the numerous institutions now engaged in the transaction of Life Assurance, Annuity, and Reversionary business. His functions may be briefly defined as *the application of the doctrine of probabilities to the affairs of life*.

ACULEATE, a. *ă-kū'lě-ăt*, or **ACU'LEAT'ED**, a. *-ăt'ěd* [L. *aculěus*, a prick or thorn—from *acus*, a needle]: in bot., sharp-pointed; thorny; prickly: in zool., having a sting or prickles. **ACULEIFORM**, a. *ăk'ū-lě'ī fawrm* [L. *forma*,

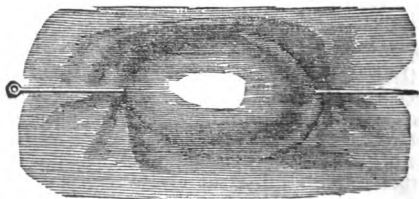
ACULEUS—ACUPRESSURE.

shape]: formed like a prickle or thorn. **ACULEUS**, n. *ă-kū' lě-ūs*, a prickle forming a process of the bark only, as in the rose. **ACULEI**, plu. *ă-kū' lě-ī*.

ACU'LEUS, in Botany: see **PRICKLE**.

ACUMEN, n. *ă-kū'měn* [L. *acūmēn*, a point, acuteness; *acūmīnīs*, of a point—from *acūō*, I sharpen]: sharpness; quickness; penetration; sagacity. **ACUMINATED**, a. *ă-kū'mī-nă-těd*, sharpened to a point; also **ACU'MINATE** and **ACU'MINOUS**, a. *-nūs*. **ACUMINATION**, n. *ă-kū'mī-nă-shūn*, termination in a sharp point; a pointed head. **ACUMINULATE**, a. *ăk'ū mīn'ū-lăt*, in *bot.*, having a very sharp, tapering point.

ACUPRESSURE, n. *ă-kū-prěsh'ūr* [L. *acus*, a needle; *pressus*, pressed], in Surgery: a mode of arresting hemorrhage from cut arteries, by the use of needles instead of ligatures, suggested to the scientific world first by Sir James Y. Simpson, Bart., in a paper read before the Royal Society of Edinburgh, 1859, Dec. The simplest mode of practicing it may be thus described:—The needle is passed through the flaps or sides of the wound, so as to cross over and compress the orifice of the bleeding artery, just as in putting a flower in the lapel of one's coat, one crosses over and compresses the flower-stalk with a pin pushed twice through the lapel. The middle portion of the needle—the only part of it which is in immediate contact with the fresh surface of the wound—bridges over and compresses the artery at its bleeding orifice, or perhaps a line or two more on its cardiac side. The head



and point of the needle are exposed externally on the cutaneous surface of the flap or side of the wound. 'When passing the needle in this method,' says Sir J. Y. Simpson, 'the surgeon usually places the point of his left forefinger or of his thumb upon the mouth of the bleeding vessel, and with his right hand introduces the needle from the cutaneous surface, and passes it right through the whole thickness of the flap till its point projects for a couple of lines or so from the surface of the wound, a little to the right side of the tube of the vessel. Then, by forcibly inclining the head of the needle towards his right, he brings the projecting portion of its point firmly down upon the site of the vessel; and after seeing that it thus quite shuts the artery, he makes it re enter the flap as near as possible to the left side of the vessel, and pushes on the needle till its point comes out again at the cutaneous surface. In this mode, we use the cutaneous walls and component substance of the flap as a resisting

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medium, against which we compress and close the arterial tube. But in some wounds, a neighboring bone or other firm unyielding texture forms the best and readiest point of resistance against which to pin and compress the artery by the acupressure needle.'

This is the first and simplest mode of applying A. Six other methods have been suggested, each with some peculiar appropriateness as a hemostatic agent.

The advantages of A. as a hemostatic agent are not universally recognized, and are, indeed, strongly denied by some practitioners. Many eminent surgeons, however, have declared A. to have the following advantages:—First, it is not only the easiest of application, but also the quickest mode yet devised for arresting hemorrhage; second, this quickness lessens the risk of suppuration, and other effects of the higher grades of inflammation in the stump; third, A. causes no condition which must be followed by suppuration, whereas the use of the ligature has never been known to obtain immediate union, or union by primary adhesion, without the formation of pus; fourth, it has never been followed by pyæmia—a constant and distressing result in the case of the ligature; fifth, the presence of a foreign body in the wound—always a source of irritation—is of much shorter duration in the case of the needle than of the ligature, while the former does not divide and strangle the arterial coats, like the latter; sixth, the patient on whom A. has been practiced is comforted by the assurance, that in a very few hours after the operation, all foreign matter will be removed from the wound—a consolation which he never enjoyed with the ligature. A., however, is now used by but few surgeons.—*Proceedings of the Royal Society of Edinburgh*, vol. iv., p. 249; *Edinburgh Medical Journal*, January, 1860; *Medical Times and Gazette*, February 11, 1860; *Acupressure*, 1 vol., 8vo, by Sir J. Y. Simpson (1865); and *A Practical Treatise on Acupressure*, by Mr. Pirrie and Dr. Keith (1867).

ACUPUNCTURE, n. *ā'kū-pūngk'tūr* [L. *acus*, a needle; *punctus*, a pricking]; in *surg.*, the pricking a diseased part with a needle with the view of lessening pain; also ACUPUNCTURA'TION, n. *-rā'shūn*: a very ancient remedy, practised extensively in the east, for the cure of headaches, lethargies, etc. In Europe it is principally employed to relieve neuralgic pains, and those of chronic rheumatism. Steel needles are used, about three inches long, set in handles. The surgeon, by a rotatory movement, passes one or more to the desired depth in the tissues, and leaves them there from a few minutes to an hour. Their insertion is accompanied by no pain, except the first prick—a fact of which the quacks of the 16th c. did not fail to take advantage. According to Jerome Cardan, they travelled from place to place practising A., and before inserting the needle, they rubbed it with a peculiar kind of magnet, either believing, or pretending, that this made the operation painless. The relief to pain afforded by this simple operation is sometimes astonishing, and the wounds are so minute as to be perfectly harmless.—The needles are sometimes used as conductors of the galvanic current to deep-seated parts, and

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are sometimes made hollow—on the suggestion of Dr. Alexander Wood of Edinburgh—to allow of a small quantity of some sedative solution being injected into the tissues, by which even the terrible pain of *tic douloureux* may be almost immediately relieved. See NEURALGIA.

ACUTE, a. *ă-kūt'* [L. *acūtūs*, sharp-pointed]: sharp-pointed; sharp; penetrating; opposed to *dull* or *stupid*; high or shrill as opposed to *grave* or *low*; in *med.*, attended with symptoms that come speedily to a crisis—opposed to *chronic*. **ACUTE'LY**, ad. *-lī*, in an acute manner; sharply. **ACUTE'-NESS**, n. the quality of being pointed or acute; force or quickness of intellect. **ACUTE ANGLE**, in *geom.*, an angle less than a right angle or 90°. **ACUTE-ANGLED TRIANGLE**, a triangle or three-sided figure with its three angles acute.—**SYN.** of 'acute': sharp; keen; sagacious; shrewd; penetrating; ingenious; subtle;—of 'acuteness': keenness; penetration; shrewdness; sagacity; ingenuity.

AD, *ād* [L.]: Latin prefix meaning *to*; *ad* assumes, for the sake of euphony, the various forms of *a*, *ac*, *af*, *ag*, *al*, *an*, *ap*, *ar*, *as*, *at*, according to the first letter of the primitive or root.

ADA, *ďă'ňh*: town of the Austrian empire, in Hungary, 8 m. s. of Zenta. Pop. 10,000.

ADACTYL, n. *ă-dăk'tŭl* [Gr. *a*, without; *daktŭlōs*, a finger]: in *zool.*, a hand without fingers; a foot without toes.

ADAFUDIA, *ă-dă-fō'dē-ă*: town of the Felattah country, w. Africa, about 400 m. s.e. from Timbuktū, about 13° 6' n. lat., and 1° 3' e. long. It is in a dry, healthy, and fertile plain, and is surrounded by a mud wall. A large trade is carried on, and slaves form a principal part of the merchandise. Pop. supposed about 24,000.

ADAGE, n. *ăď'ăj* [F. *adage*—from L. *adāgŭm*, a proverb]: a proverb; an old or wise saying which has been handed down from olden times.—**SYN.** of 'adage': proverb; byword; aphorism; axiom; maxim; saying; saw; truism; apophthegm.

ADAGIO, n. *ă-dă'jŭ-ō* [It.]: ad. slowly: a slow movement or measure of time in Music, between *largo*, *grave*, and *andante*. In more extended compositions of instrumental or chamber music, the second or third *movement* is generally marked *adagio*, and serves as a contrast with the rapid and energetic movement of the preceding and following parts of the sonata or symphony. The A. must be written in a measure of time which will afford scope for a flowing and expressive slow melody with a gracefully varied accompaniment. Without contrasted movement and a lively variety in the accompaniment, the slow air would have a monotonous or dull effect. A clear and expressive execution of the A. is a sure test of ability and good taste in the player or singer, as it demands a pure and beautiful intonation, a true reading and phrasing of the cantilena, even in its most minute details, and a careful attention to all points of effect. The finest specimens of the A. are found in the works of the

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old masters, Haydn, Mozart, and Beethoven, and are as distinct in their features as were the composers in their personal characteristics. Recent composers have generally succeeded better in their rapid movements than in the A.

ADAL and **ADEL**, *â-dâl'*: the name Adal is applied by geographers to the flat country lying between Abyssinia and the Red Sea, from Massowa in n. lat. 15° 40', to the bay of Tajurra, lat. 11° 30'. Adel seems to designate the coast-country from Tajurra to Cape Guardafui, part of which is known as the country of the Somaui.

ADALIA, *â-dâ'lē'â*, anciently *Attalia*: chief seaport on the s. coast of Asia Minor; n. lat. 36° 52'; e. long. 30° 45'. The streets rise like the seats of a theatre, up the slope of the hill behind the harbor. Pop. 18,000.

ADAM, n. *âd'âm* [Heb. *adamah*, ground, earth]: the first man mentioned in Genesis. **ADAMIC**, a. *â-dâm'ik*, pertaining to. **AD'AM'S AP'PLE**, n. the prominent part of the throat; the larynx. **ADAM'S NEEDLE**, a plant of New Mexico, the *Yucca glōriōsa*, Ord. *Liliacēa*. **ADAMITES**, n. plu. *âd'â-mīts*, a religious sect of the first, and revived in the fifteenth century, who professed an exact imitation of the primitive state of innocence in their public assemblies. **ADAMITIC**, a. *âd'â-mīt'ik*, pertaining to the time of Adam. **PRE-ADAMITE**, a. *prē-âd'â-mīt*, before the time of Adam.

ADAM and **EVE**: the earliest man and woman of the human race. The narrative of their creation and fall is in Genesis. To the scriptural account, the later Jewish writers in the Talmud have made many tasteless additions. They tell us that the stature of A., when first created, reached to the heavens, while the splendor of his countenance surpassed that of the sun. The very angels stood in awe of him, and all creatures hastened to worship him. Then the Lord, in order to show the angels his power, caused a sleep to fall on A., and removed a portion of every limb. A. thus lost his vast stature, but remained perfect and complete. His first wife was *Lilith*, the mother of demons; but she fled from him, and afterwards E. was created for him. At the marriage of A. and E., angels were present, some playing on musical instruments, others serving up delicious viands; while the sun, moon, and stars danced together. The happiness of the human pair excited envy among the angels, and the seraph Sammael tempted them, and succeeded in leading them to their fall from innocence.—According to the Koran, all the angels paid homage to A., excepting Eblis, who, on account of his refusal, was expelled from paradise. To gratify his revenge, Eblis seduced A. and E., and they were separated. Adam was penitent, and lived in a tent on the site of the temple of Mecca, where he was instructed in the divine commandments by the archangel Gabriel. After 200 years of separation, he again found E. on Mount Ararat. Many other traditions of the Jews and the Mohammedans respecting A. and E. may be found in Herbelot's *Bibliothèque Orientale*.—In the system of the Christian Gnostics and Manichæans, A. is one of the highest Æons.—According to the Calvinistic

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theology, A. was the *covenant head* or *federal representative* of the whole human race, who were thus involved in the consequences of his breach of the *Covenant* (q.v.) which God made with him at his creation. This view is supported by reference to the parallel drawn between A. and Christ, Rom. v. and 1. Cor. xv., in the latter of which chapters Christ is called, in contradistinction to A., 'the second man,' and 'the last A.'

ADAM (OF BREMEN): d. 1076: old historical writer, whose work entitled *Gesta Hammenburgensis Ecclesiæ Pontificum*, gives a history of the archbishopric of Hamburg from 788 to the death of the Abp. Adalbert in 1072. This work has great historical value; in addition to its notices of ecclesiastical affairs, it gives accounts of the northern Slavonic tribes, which the author collected during a visit to the Danish king Svend-Estrithson. A. was canon and *magister scholarum* at Bremen from 1067 till his death.

ADAM, ALEXANDER, LL.D.: 1741-1809: an eminent scholar and teacher; b. in the parish of Rafford, near Forres, Scotland; d. Edinburgh. His father was a small farmer, with limited means and a numerous family, so that young A. had to struggle for learning through much hardship. At the University of Edinburgh, he supported himself by giving private lessons, at the rate of one guinea a quarter. He breakfasted and supped on porridge and small-beer; a penny loaf served him for dinner. His patient merits, however, soon gained recognition. A.'s first public office was that of classical master in Watson's Hospital, Edinburgh; and, 1761, he succeeded to the head-mastership of the institution. In 1768 he was appointed rector of the High School; and this situation he filled for nearly forty years with distinguished ability and success. In some of his efforts he encountered such opposition as now seems fabulous. He published, 1772, his *Latin Rudiments and Grammar*, in English instead of in Latin as in the old text-books, but the town-council prohibited him from teaching it. In 1791 he published his *Roman Antiquities*, the work which did most to promote his reputation,—for many years the best manual of the kind. His *Summary of Geography and History* appeared 1794; his *Classical Biography*, 1800; his *Latin Dictionary*—an abridgment of a larger work unfinished at his death—1805. A. died of apoplexy, the effect of intense study. 'Amidst the wanderings of mind that accompanied it,' says Prof. Pillans, the writer of his biography in *Encyc. Brit.* (8th edit.), and his successor in his chair, 'he was constantly reverting to the business of the class; and in the last hour of his life, as he fancied himself examining on the lesson of the day, he stopped short and said: "But it grows dark; you may go," and almost immediately expired.'

ADAM, ROBERT; 1728-92; b. Edinburgh: a distinguished architect: son of William Adam of Maryburgh, Fifeshire, also an architect. After receiving a university education, A. went, 1754, to Italy, and thence to Dalmatia, where he explored and made drawings of the ruins of Diocletian's palace

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at Spalatro. On his return to Britain he rapidly rose to distinction, was appointed architect to the king, and obtained extensive employment. In opposition to the heavy style of architecture prevalent, A. introduced a taste for lightness and decoration, which, however, tended to the opposite extreme of weakness and triviality. Yet those who form the lowest estimate of the general character of his designs, grant him the merit of having effected great and general reforms in British domestic architecture. In 1768 A. was elected M.P. for the county of Kinross. During upwards of twenty-five years his practice, in partnership with his brother James, was more extensive than that of any other architect of the time. In 1773 the brothers began to publish a series of engravings of their chief designs, which was continued for some years. A. was buried in Westminster Abbey. The most generally admired of his works is the Register House, Edinburgh. Kedleston Hall, near Derby, is regarded by some as his greatest work. Among his other principal works are the University buildings and St. George's Church, Edinburgh (both altered from the original design), the Glasgow Infirmary, the Adelphi buildings, London; the screen to the Admiralty, Caen Wood House, Luton House (altered), Lansdowne House, etc.

ADAMANT, n. *ăd'ă-mănt* [OF. *adamant*—from L. *ad-âmās* or *adāman'tem*, a hard stone—from Gr. *adīmas*—from *a*, not; *damāō*, I subdue]: what cannot be broken, tamed, or subdued; a stone or metal of impenetrable hardness; the diamond. **ADAMANTINE**, a. *ăd'ă-măn'tin*, exceedingly hard; hard-hearted; not to be broken or subdued; also **AD'AMANTE'AN**, *-tē'ăn*, hard as adamant.

ADAMANTINE SPAR: see **CORUNDUM**.

ADAMBULACRAL, a. *ăd-ăm'bū-lă'krăl* [L. *ad*, to; *ambulācrum*, a walk or path]: in *zool.*, applied to the small bones which bound the ambulacral grooves in the starfishes. See **OSSICLE**.

ADAMITES: a sect of fanatics who spread themselves in Bohemia and Moravia in the 15th and 16th centuries, but had no connection with the Hussites. One Picard is said to have been the founder of the sect about 1400. He styled himself Adam, the son of God, rejected the sacrament of the supper and the priesthood, and advocated the community of women. After his death his followers spread themselves in Bohemia under several leaders. They even fortified themselves on an island in a tributary of the Moldau, and committed depredations around. They were detested as much by the followers of Huss as by the Roman Catholics. Ziska (q.v.) made war against them, and slew great numbers; but they were never entirely rooted out. Even as recently as 1849, when the Austrian government declared religious liberty for all its subjects, certain members of this sect appeared and endeavored to gain proselytes. The official investigation into their character which took place at that time represents their creed as a mixture of freethinking, quietism, and communism. The members belong to the peasant or laboring class; and both men and

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women are generally industrious, temperate, and discreet in their ordinary course of life; but at their nightly meetings, at which they dispense with clothes, the utmost licentiousness is said to prevail.—As early as the 2d c., there was a sect of Gnostic tendency, called *Adamites*, who sought, by abstaining from all indulgence of the senses, to recall the state of innocence men were in before the fall. They therefore rejected marriage, and in order to exercise the virtue of continence, went naked. They held that for those who had once attained the state of innocence, all actions were alike indifferent—neither good nor evil. This doctrine led directly to the greatest licentiousness. Aberrations of this kind, under various disguises and modifications, have made their appearance from time to time in all ages of the world.

ADAMNAN, *ad'am-nan'*, SAINT: b. abt. 625 in the county of Donegal; d. 704: a member of the early Irish Church, to whom the world is deeply indebted for the information which he left about that remarkable community. His name was properly Adam, of which Adamnan is a diminutive. It is one of the peculiarities of that early church that the genealogies of its eminent members have been preserved with a minuteness scarcely rivalled in the days of peerages. In the words of Dr. Reeves concerning A.: 'His father, Ronan, was sixth in descent from Conall Gulban, the head of one of the two great races of the Northern Hy Neill, and in virtue of his birth, claimed kin to St. Columba and many of the sovereigns of Ireland. The father of Ronan was Tinne, from whom came the patronymic *Ua Tinne*, or grandson of Tinne, an appellation which is occasionally found coupled with A.'s name. Ronnat, the mother of A., was descended from Enna, a son of Niall, whose race, the Cincl Enna, possessed themselves of the tract lying between the channels of the Foyle and Swilly, which was called the Tir Enna, or land of Enna, and answers to the modern barony of Raphoe. He was, like many of the eminent Irish clergy, a statesman as well as an ecclesiastic, and we hear of his being sent on missions from his own people to Alfred, king of Northumbria. In 679, he was elected Abbott of Iona. His rule over that community was not, however, peaceful and fortunate. The views held by the Irish Church about the holding of Easter and the form of the tonsure are now known as a chapter in the history of the church. However little their own importance might be, they are significant as the object of a bitter contest in which that church resisted the rules promulgated from Rome. In his intercourse with the Saxon Church, A. had adopted the Roman or orthodox views, as they are termed, and endeavored to put them in practice in his own community. He was thwarted in this object, and it is said that mortification at the failure caused his death. Sept. 23, the date of his death, is the day of his translation in the calendar. He left an account of the Holy Land, containing matters which he says were communicated by Arculfus, a French ecclesiastic who had lived in Jerusalem. It is valuable as the earliest information we possess of Palestine in the early ages of Christianity. But far more valuable is

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his *Vita Sancti Columbæ*, his Life of St. Columba, the converter of the Picts, and founder of Iona. With accounts of miracles and many other stories palpably incredible, this book reveals a great deal of distinct and minute matter concerning the remarkable body to which both the author and his hero belonged. The standard edition of the book is that of Dr. Reeves, edited in 1857 for the Bannatyne Society of Edinburgh, and the Irish Archæological Society, which (with an English trans.) forms the 6th vol. (1875) of *Scottish Historians*. Nearly all the information to be had about the early Scoto-Irish Church is comprised in that volume.

ADAMS, CHARLES FRANCIS, LL.D.: 1807-86; b. Boston; son of John Quincy. His boyhood was passed mostly in the European capitals, but he returned to the United States in 1817; studied at the Boston Latin schools, and in 1825 graduated from Harvard Univ. He studied law, and was called to the Boston bar, but never practiced. In 1830 he was elected to the legislature of Massachusetts as a representative from Boston, and was afterwards returned to the state senate. He became a 'free-soiler' in politics, and was nominated by that party in 1848 for vice-president on the Van Buren ticket, but Taylor and Fillmore were elected, and on the formation of the republican party, a combination of the free-soilers and old-line whigs, Mr. A. attached himself to the new organization, and in 1859 was sent to congress. In 1861 president Lincoln appointed Mr. A. minister to England, and there his hitherto untried diplomatic talents had opportunity, and gained for him the highest respect of the statesmen of Europe and of his own country. It was largely due to the judicious conduct of Mr. A. that the difficult questions of the Mason and Slidell capture, of the building in English ship-yards of blockade-runners, and those connected with the Lancashire cotton famine, were settled or successfully tided over. He held his post in London till 1868, when, at his own request, he was recalled. On the ratification, 1871, of the treaty of Washington, A. was appointed by Pres. Grant the American arbitrator for the settlement of the claims under that treaty. Here, again, his remarkable diplomatic skill was exercised to the advantage of his country, in securing the Geneva award. A. was a candidate for nomination for the presidency by the liberal republicans in 1872, but was defeated in the convention by Horace Greeley. He afterwards retired from the republican party, and in 1876 was nominated by the democrats for the governorship of Massachusetts, but was defeated. A. was the author of biographies of his grandfather and of his father.

ADAMS, CHARLES KENDALL, LL.D.: b. Vt. 1835; removed to Iowa, afterwards to Mich., graduating at Ann Arbor in 1861. He became a tutor and then prof. of history in his univ., and in 1881 was made one of the non-resident professors in the chair of history, at Cornell Univ., Ithaca, N. Y. In 1885, when Andrew D. White resigned the presidency of Cornell, he recommended Prof. A. as his successor; and, although Gen. Francis A. Walker and James

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Russell Lowell were suggested as candidates for the place, Prof. A. was elected in July of that year. Pres. A. is the author of a work, entitled *Democracy and Monarchy in France* and a charge of plagiarism in this work from Buckle's *History of Civilization* was freely made during the exciting canvass for the Cornell presidency, but on examination entirely failed of support. Pres. A. has also published a *Manual of Historical Literature*. He is a most diligent student, and a wise and energetic administrator.

ADAMS, JOHN, second president of the United States: 1735-1826: b. Braintree, Mass., in that portion of the township which afterwards became the town of Quincy. His great grandfather was Henry Adams, a Puritan, who emigrated from Devonshire, Eng., 1632, with his six sons all married. At the age of fifteen, John was offered his choice of a vocation in life, and chose a college education, with the understanding that that portion of the estate which would be his at the death of his father should instead be expended on his education. He entered Harvard College, 1751, and graduating, four years later, went to Worcester, where he became a tutor in a grammar school, at the same time studying law in the office of Israel Putnam. In 1764 A. married Abigail Smith, daughter of the minister of Weymouth. He soon began to be prominent in politics, particularly among those who vehemently opposed the operation of the 'Stamp Act.' In 1768 he settled in Boston, and began to write political articles for the newspapers. So highly were the abilities of A. esteemed, even at this early period of his life, that the royalist, Governor Barnard, desiring to gain him over to the king's party, offered him the important office of advocate-general in the Admiralty court. This proposition he declined, but was soon after chosen a representative in the provincial congress, and in 1774 was one of the five members from Massachusetts in the general congress. In a letter written at the age of nineteen, A. foreshadowed with wonderful prophetic power the political conditions in which he afterwards held so important a part. He said: 'Soon after the Reformation, a few people came to this new world for conscience sake. Perhaps this apparently trivial incident may transfer the great seat of empire to America. It looks likely to me; for if we can remove the turbulent Gallic (the French in Canada), our people, according to the exactest computation, will in another century become more numerous than England itself. Should this be the case, it will be easy to obtain the mastery of the seas, and then the united force of all Europe will not be able to subdue us. The only way to keep us from setting up for ourselves is to disunite us.' The organization of the Continental Congress was the crucial test of the patriotism of John Adams. Besought by his nearest friend and closest associate, Jonathan Sewall, to alter his determination to be a member of the congress, he gave utterance to the following thrilling expression of his patriotic opinions: 'I know that Great Britain has determined upon her system, and that very fact determines me on mine. You know I have been constant and uniform in opposition to her

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measures; the die is now cast; I have passed the Rubicon, to swim or sink, live or die, survive or perish with my country, is my unalterable determination.' He joined the congress and became at once one of its most active and earnest leaders. He was a member of the committee which framed the Declaration of Independence, and Mr. Jefferson said of him: 'The great pillar of support to the Declaration of Independence, and its ablest advocate and champion on the floor of the house, was John Adams.' The selection of Washington for the chief command was largely the work of A., and he was particularly useful in the Naval committee of congress, and our present naval code is founded upon the rules which he then prepared. In 1775 A. was appointed chief justice of Massachusetts, but declined the office. In congress he recommended local self government for the colonies, and succeeded in carrying a measure to that effect 1776, May 13; from this grew the succeeding confederation, with its adoption and application of the treaty-making power, and so, essentially, the general powers and limitations of the government. Being made chairman of the congressional board of war, A. was practically secretary of war, and created the war department that conducted the military movements of the Revolution. In 1777 he was appointed a commissioner to France, to replace Silas Deane, and in 1779 was commissioned to England to negotiate a peace, and was empowered to form a commercial treaty with Great Britain. Trouble with Count de Vergennes, the French minister, interfered with his mission, and he went to Holland, where he negotiated a loan of \$2,000,000 and a treaty of commerce.

When peace was declared, A. was appointed the first ambassador to London, and remained there until 1787, when he returned to America, to receive the thanks of his countrymen, and the office of vice-president with Washington. In the mean time A. had published his *Defense of the American Constitution* and his *Discourses on Davila* which made a profound impression upon the leading minds of Europe for their fearless expression of new and unpopular views of government. A. was retained as vice-president during the second administration of Washington, though he had by this time separated in opinion from Jefferson on the question of the French revolution, and the latter's great influence and popularity were used to defeat him. On the retirement of Washington, A. was chosen president, against Jefferson, Jay, Hamilton, and Thomas Pinckney, as rival candidates, and by only two votes in the electoral college more than Jefferson, who under the then existing law became vice-president. Adams' administration was beset with difficulties from the beginning. He had quarrelled with Hamilton on the question of the antagonisms raised during the election, and the federal party was in its last days. Complications arose with France, which were still further entangled by the impolitic conduct of James Monroe, minister to that country, who was no match for Talleyrand, the French minister of state. The slave power was also beginning to be a factor in domestic politics, under the leadership

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of Jefferson, and so on the election of his rival to the presidential chair, A. vacated the office without even waiting to see his successor take his seat. He retired with dignity to his native place, and thereafter took no further active interest in public life. He was not, however, suffered to rest in peace, after his arduous and patriotic endeavors in the service of his country, but was hounded by the mischievous and the time-serving of both parties, whose frivolous and baseless charges the old man answered in able defense of his public career in the press. In his 86th year he was honored by the citizens of his own state by his election as a delegate to the convention to revise the constitution of Massachusetts, in which body he showed a degree of liberality of opinion which had been hitherto foreign to his habit of mind. On the 4th of July, 1826, the semi-centennial anniversary of American independence, Thomas Jefferson, at his home in Monticello, and John Adams at the family mansion, in Quincy, Mass., died almost at the same hour—an impressive coincidence. During the later years of their life the two great statesmen had renewed the friendship which political differences had temporarily broken, and corresponded frequently.

A. was of rather more than the average stature, with a fine head, and genial, kindly expression. His manner was dignified and manly, and made a favorable impression abroad. He was a cultivated scholar, and a forcible, and at the same time elegant writer, a brilliant conversationalist and admired in society. His temper was hot, but he never bore malice, though he was always impatient of opposition. Few figures of the revolutionary period of our history outranked him in the public esteem—until fierce faction struggles blinded his political adversaries to his many high qualities as a man and as a statesman.

ADAMS, JOHN COUCH: b. 1819, near Launceston, Cornwall: discoverer, simultaneously with Le Verrier, of the planet Neptune. He early showed aptitude for mathematics; and after the usual school-training, he was sent to St. John's college, Cambridge, where he attained the honor of senior wrangler, and became a mathematical tutor. In 1841, he undertook to find out the cause of the irregularities in the motion of Uranus, anticipating, indeed, his own and Le Verrier's discovery—namely, that they are due to the influence of a planet then unknown. Le Verrier did not commence his researches till the summer of 1845; but published the results of his calculations, Nov. 10, demonstrating the existence of an unknown planet, declaring it to be the cause of the known disturbance, and assigning to it almost the same place as A. had done in a paper which he left with the Astronomer Royal at Greenwich Observatory in the previous October, but which he had neglected to publish. Le Verrier has thus acquired, naturally, the whole honor of the discovery; but the merit of A. is not less. The researches of the latter began earlier; his discovery, too, was earlier; he was behind only in publication. The council of the Royal Astronomical Society showed that they appreciated A.'s labors, by awarding equal honors to both. In

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1858, A. was appointed to the chair of mathematics in St. Andrew's, which, however, he vacated in a few months, on being nominated to the Lowndean professorship of Astronomy, Cambridge.

ADAMS, JOHN QUINCY: 1767, July 11—1848, Feb. 23; b. Braintree, Mass.; eldest son of John. He accompanied his father to Paris, when he was 11 years old, and during the latter's negotiations with the Dutch at the Hague, attended the Univ. of Leyden. Returning to America, he graduated at Harvard Univ., 1788; studied law in the office of Theophilus Parsons three years, and was admitted to the bar, 1791. In the mean time, he had travelled somewhat extensively in Europe, having been officially attached to the mission of Francis Dana to St. Petersburg, and resided also in London and Paris. After his admission to the bar he contributed a number of political letters to a Boston newspaper, which brought him prominently before the public as an able and thoughtful writer. In 1794, Washington appointed him minister to the Hague, and on his father's succession to the presidency, he was appointed minister to Berlin, from which post he was recalled on the election of Jefferson. While in Berlin, Mr. A. learned German, and translated Wieland's *Oberon* into English. On his return to this country, he resumed the practice of law in Boston, and in 1802 was elected to the state senate from Suffolk co. In 1803, he was elected to the United States senate by the Federalists, but eventually parted from them on Jefferson's 'embargo' proposition, for which he voted—a course of conduct which brought him into much controversy, and resulted in his resigning from the senate. From 1806 to 1809, Mr. A. was prof. of rhetoric and belles-lettres in Harvard Univ., where his lectures—the first in that department ever read in an American univ., attracted much attention. On retiring from his professorship, Mr. Adams visited Washington, where he denounced the federal leaders to Jefferson, accusing them of a design to subvert the government and erect a northern confederacy. This charge was very seriously made and sustained, and for a long time lowered the standing and influence of those who, it was alleged, were affected by it. In 1809, Madison on assuming the presidency, appointed Mr. A. minister to St. Petersburg, a position which the latter accepted against the wish of his father, and which he continued to hold, declining the office of associate justice of the supreme court of the United States, which was offered him while he was in Russia. On the outbreak of the war of 1812 between Great Britain and the United States, his influence at the court of the Czar enabled him to induce that monarch to offer his services as a mediator, but they were declined by England. In 1813, with Henry Clay, Albert Gallatin, and Jonathan Russell, Mr. Adams was appointed a commissioner to negotiate a treaty of peace, and this was satisfactorily accomplished at Ghent, where the signatures were affixed, 1814, Dec. 24. During the next two years, Mr. Adams served as Minister to England, being recalled in 1817 to take the place of secretary of state in Mr. Monroe's

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cabinet. His most important act in this position was the conclusion of a treaty with Spain settling all disputes regarding Florida and Louisiana. During his incumbency of the secretaryship, he made an elaborate report on weights and measures which was highly esteemed by scientific men, and is still constantly referred to as an authority. The presidential election of 1824 was thrown into the house, the candidates being Andrew Jackson, John Quincy Adams, and William H. Crawford, when Mr. A. received the votes of thirteen states, Jackson of seven, and Crawford of four; and A. was accordingly declared elected. His administration was marked chiefly by the bitterness of his political enemies, of which there were many, and the fact, that before its close, he had both houses of congress arrayed against him. It was at this period that the system of high tariff was begun, and also that the first of the many fruitless attempts to gain possession of Cuba by purchase was made. A. vainly sought re-election in 1828: he was defeated by Andrew Jackson by 178 votes to 83, and on the latter's inauguration, he retired to Quincy. But so far was he from now closing his political life, that, although sixty-three years of age, he accepted the nomination for congress, was elected, and retained his seat during seventeen years. In 1834, he was a candidate for governor of Massachusetts, and again for senator, and both times was defeated by John Davis. In congress, Mr. Adams became noted as the friend of the people, and especially as the determined champion of the right of petition. This right he asserted, and battled for, in season and out of season, even to the extent, on one occasion, of presenting a petition from slaves—and, not only that, but forcing its acceptance. He secured the repeal of the outrageous 'gag-rule' denying the privilege of petition on the subject of slavery, after having fought the question for nine years. It was this strenuous advocacy of free-speech which eventually drove him into the ranks of the abolitionists. On Nov. 26, 1846, while on his way from Boston to attend congress, Mr. Adams was seized with an attack of paralysis, and was unable to be in his seat for four months, though he afterwards returned to it, but spoke infrequently. On Feb. 21, 1848, he was seized with a second paralytic stroke while in his seat in the house of representatives. He was removed to the speaker's room, and lingered until the second day afterwards, when he expired; his last words were—'This is the last of earth: I am content.' Mr. A. married in 1797 the daughter of Joshua Johnson, a retired merchant of Nantes. He was, in religious belief, a Unitarian of the earlier or moderate type, as his father had been. He left voluminous writings upon a multitude of topics, political and others, published after his death in complete form, edited by his son, Charles Francis. He ranked higher as diplomatist than as statesman; in the latter capacity his judgment sometimes suffered from the strength of his prejudices.

ADAMS, SAMUEL: 1722, Sept. 27—1802, Oct. 2; b. Boston: one of the most renowned patriots of the American Revolution: great-grandson of Henry, an English emigrant,

ADAM'S BRIDGE.

ancestor also of Pres. John Adams. He received his education at Harvard College, and took the degree of A.M. in 1740. He made various attempts at the choice of a vocation, having first studied for the bar, and not liking that profession, made an effort in mercantile business, but found his true sphere in politics, and soon became prominent in the discussion of the important questions then beginning to interest the colonial mind. He was a member of the Massachusetts legislature 1766-1774, and as early as 1764 had raised his voice in public protest against the practice of taxation without representation. In 1774, he was sent to the first congress of the confederation, and so important was his action while in that body, in its influence in bringing about the final separation of the colonies from the mother country, that, with John Hancock, he was named as an exception to the free offer of pardon made by Gen. Gage to those rebels who should return to their allegiance. He was one of the warmest advocates of the adoption of the declaration of independence, of which he was also one of the signers. In 1781, A. retired from congress, and was active in the convention which framed the constitution of Massachusetts. Being elected to the state senate, he presided over the deliberations of that body for several years. In 1789, he was elected lieut. gov., which office he continued to hold till 1794, when, on the death of John Hancock, he was elected gov., and annually re-elected till 1797, when he retired from public life. In a work by a Mr. Galloway (London, 1780) on 'The American Rebellion,' Mr. Adams is thus described: 'He eats little, drinks little, sleeps little, thinks much, and is most indefatigable in the pursuit of his object. It was this man, who, by his superior application, managed at once the factions in congress at Philadelphia, and the factions in New England.' A. was a natural democrat, and even accused his countrymen of aristocratic tendencies, because of their confidence in Washington, whom he persistently underrated, both as a general and as a statesman. He was narrow in his views and dogmatic in the expression of them, impatient of opposition, and self-opinionated; but a man of rare integrity, lofty principle, great courage and determination, and splendid fidelity to his convictions. He opposed the federal constitution, and, in politics, was a staunch adherent of Jefferson and of Jeffersonian democracy. In person, A. is described as of medium height, with light complexion and blue eyes, possessing an erect and dignified carriage, his usual costume being a red cloak, tie-wig, and cocked hat. He was twice married, and it is related that in his early days of wedded life, when he pursued the unprofitable path of politics, his wife supported both him and herself by her own labor. He was never even in comfortable circumstances until the death of a son, in the latter part of his life, brought him a bequest, sufficient in amount to sustain him. He wrote numerous state papers of recognized merit, and contributed political articles to the newspaper literature of the day. He left one daughter, but none of his blood to transmit his name to posterity.

ADAM'S BRIDGE: a chain of shoals extending across

ADAM'S PEAK—ADANSON.

the gulf of Manaar, between Ceylon and the peninsula of Hindostan; a great obstruction to vessels.

ADAM'S PEAK: name given by Mohammedans, and after them by Europeans, to a mountain summit in the s. of Ceylon, 7,420 ft. high (not, however, the highest of the group). The native name is Samanbela. The cone forming the summit is a naked mass of granite, terminating in a narrow platform, in the middle of which is a hollow, 5 ft. long, having a rude resemblance to a human footstep. Mohammedan tradition makes this the scene of Adam's penitence, after his expulsion from Paradise; he stood 1,000 years on one foot, and hence the mark. To the Buddhists, the impression is the *Sri-pada*, or sacred footmark, left by Buddha on his departure from Ceylon, while the Hindoos claim it as the footprint of their god Siva. Over the sacred spot stands a wooden canopy, and multitudes of devotees, Buddhist, Hindu, and Mohammedan, frequent it.

ADANA, á-dá'ná: a Turkish ejalet or province in s. e. Asia Minor, derives its name from its chief city Adana, containing 25,000 inhabitants. The city is almost 30 m. from Tarsus, on the way to Aleppo, commands the pass of the Taurus mountains, and carries on a considerable trade between Syria and Asia Minor. Pompey peopled the territory of A. with pirates. The Syrian kings made the place a city, under the name of *Antiochia ad Sarum*, and on the ruins of Antiochia the caliph Haroun al Raschid built A. The present inhabitants are mostly Turks, mixed with some Greeks and Armenians.

ADANSON, á-dôn-sôn' MICHEL: 1727-1806; b. Aix: celebrated French botanist. He soon left the clerical profession, for which he had been educated, and devoted himself to the study of natural history. In his early career, he had the ambition of superseding the Linnæan system by a clearer and more comprehensive method of arrangement. When about twenty-one years old, he went to Senegal in Africa, and, fearless of the unwholesome climate, stayed there five years, returning to France, with a large collection of specimens. Soon after his return, he laid before the French East India Company his plan of a colony on the African coast, in which all colonial produce was to be raised without slave-labor; but his plan was neglected. He published, 1757, his *Histoire Naturelle du Sénégal*; and, 1763, his *Familles des Plantes*, in which he endeavored to give a new form to botany; but he could not prevail against the established Linnæan system. His next undertaking was on a vast scale—nothing less than a complete Encyclopedia, for which he hoped to gain the patronage of Louis XV. and the Academy; but though his bold plan was regarded with admiration, he received little substantial encouragement. This, however, did not check his enthusiasm; he proceeded with the work until he exhausted his means. During the Revolution he fell into very indigent circumstances. When invited to become a member of the National Institute, he answered that he was unable to attend for want of a pair of shoes. Afterwards, he received a pension, and until the time of his death he was

ADANSONIA—ADD.

earnest in the prosecution of his plan, too vast to be carried out by an individual.

ADANSONIA, *ād-ān-sō'nī-ă* [named by Linnæus in honor of the botanist *Adanson* (q.v.)]: a genus of the natural order *Sterculiaceæ* (q.v.), sub-order *Bombaceæ*, distinguished by a simple deciduous calyx, a very long style, with numerous stigmas, and a woody capsule containing a farinaceous pulp. The only known species, *A. digitata*, the *Baobab*, also called the Monkey-bread Tree, is a native of the tropical parts of w. Africa, but now introduced into the East and West Indies. It is one of the very largest trees—not rising to a great height, but exceeding almost all other trees in the thickness of its trunk (20–30 feet). Even its branches (60–70 feet long) are often as thick as the stems of large trees, and they form a hemispherical head of 120–150 feet in diameter; their outermost boughs drooping to the ground. The leaves are digitate or 7-fid; the flowers are white and extremely large, on drooping peduncles a yard in length. The fruit (*Monkey-bread*) is of the size of a citron. The bruised leaves (*Lalo*) are mixed with the daily food of the inhabitants of tropical Africa; and Europeans in that country use them as a remedy for diarrhœa, fevers, and diseases of the urinary organs. The pulp of the fruit, which is slightly acid and pleasant to the taste, is eaten with or without sugar; and the expressed juice mixed with sugar is much esteemed as a beverage, being very refreshing, effectual in quenching thirst, and regarded as a specific in putrid and pestilential fevers. The bark is said to be powerfully febrifugal.

ADAPT, v. *ă-dăpt'* [F. *adapter*, to fit to, to adapt—from L. *adŭptārē*—from *ad*, to; *apto*, I fit—*lit.*, to fit to a thing]: to fit; to make to suit. **ADAPT'ING**, imp. **ADAPT'ED**, pp. **ADAPTABLE**, a. *ă-dăpt'ă-bl*, that may be suited. **ADAPTABILITY**, n. *ă-dăpt'ă-bil'it-ē*, also **ADAPT'ABLENESS**, n. *ă-bl-nēs*, the being fitted or suited for. **ADAPTATION**, n. *ăd'ăp-tă-shŭn* [F. *adaptation*—from L. *adaptatiōnem*]: the act of making suitable; fitness, as of one thing to another. **ADAPT'EDNESS**, n. state of being adapted.

ADAW, v. *ă-dăw'* [AS. *a*, intensive; *dagian*, to become day, to dawn]: in *OE.*, to wake out of sleep, or out of a swoon. **ADAW'**, v. [Goth. *thahan*; M.H. Ger. *dagen*; Icel. *thagga*, to be silent, to silence, to hush]: to reduce to silence; to still or subdue. **ADAW'ING**, imp. **ADAWED**, pp. *ă-dăwd'*.

ADAYS, ad. *ă-dăz'* [AS. *a*, on, and *days*]: in the day-time; every day. **NOWADAYS**, ad. at the present time; in this age.

ADD, v. *ăd* [L. *addĕrĕ*, to put to or unite with—from *ad*, to; *do*, I give—*lit.*, to put to or near another]: to put together; to join; to unite. **AD'DING**, imp. **ADDED**, pp. *ăd'-ădĕd*. **ADDIBLE**, a. *ăd'di-bl*, also **ADDITIVE**, a. *ăd'di-tiv*, that may be added. **AD'DIBIL'ITY**, n. the state, or possibility of being added. **ADDITION**, n. *ăd-dish'ŭn*, an increase; uniting two or more numbers into one sum; something put to. **ADDITIONAL**, a. *ăd-dish'ŭn-ăl*, something more. **ADDI'TIONALLY**, ad. *-lĭ*, in a manner to add to.—**SYN.** of 'add': to

ADDA—ADDISON.

annex; append; join; unite; coalesce;—of 'addition': accession; augmentation; increase; adjunct; appendage.

ADDA, *ād'dā*, the Latin *Addua*, a river of Lombardy, rising in the Rhætian Alps above Bormio. It flows into the Lake of Como, issuing from which, below Lecco, it traverses the plain of Lombardy in a direction s.s.e., passing Lodi and Pizzighetone, and falls into the Po about 8 miles above Cremona. It formerly bounded the republic of Venice and the duchy of Milan.

ADDAX: see **ANTELOPE**.

ADDENDUM, n. *ād-dēn'dūm* [L.]: an appendix; something added. **ADDENDA**, n. plu. *-dā*, numbers to be added.

ADDER, n. *ād'dēr* [AS. *næddre* or *ættr*; Ger. *natter*; Low Ger. *adder*; W. *neidr*; Icel. *nadr*; Goth. *nadr*]: a poisonous serpent; a viper; the *Pelias bērus*. **ADDER-FLY** or **ADDER-BOLT**, n. dragon-fly. **ADDER'S TONGUE**, a genus of small ferns, whose seeds are produced on a single spike, supposed to resemble a serpent's tongue; the *ophioglossum*, which see.

ADDER: common English name of the viper (q.v.), but also often more vaguely used for poisonous serpents of the family *Viperidae*. Where the name occurs in the English version of the Scriptures, it appears to be in this vague sense; for although the four Hebrew words rendered *Adder* doubtless had some precise distinction from each other, the distinctions cannot now be traced with certainty. A very venomous serpent of New South Wales (*Acanthopis tortor*) is sometimes called the *Death* or *Black A*.

ADDICT, v. *ād-dikt'* [L. *addictus*, adjudged, assigned: mid L. *addictārē* for *indictārē*, to accuse—from *ad*, *dictus*, said, named—from *dicēre*, to say, to proclaim]: to give one's self up to, as to a custom or habit—usually in an ill sense. **ADDICT'ING**, imp. **ADDICT'ED**, pp. **ADDICT'ED-NESS**, the quality of being addicted. **ADDICTION**, n. *ād-dik'shūn*, the state of being addicted.—**SYN.** of 'addict': to devote; apply; dedicate; consecrate.

ADDISCOMBE: see **CADET**.

ADDISON, *ād'ī-sŏn* **JOSEPH**: 1672, May 1—1719: b. Milston, near Amesbury, Wiltshire: son of an eminent clergyman of the Church of England. He entered the university of Oxford when only fifteen years of age, where he greatly distinguished himself, especially by the facility with which he wrote Latin verse. He was originally intended for the church, but various circumstances conspired to draw him aside into literature and politics, the principal of which were his acquaintance with Dryden, who honored the young poet with his patronage, and his intimacy with Lord Somers, whose favor he gained by dedicating a poem to him on one of King William's campaigns. In 1699 he received a pension of £300 a year, and then set out on a continental tour. While in France, he perfected himself in the language of the country. On the outbreak of the Spanish war of succession, he departed to Italy, where he penned his charming *Letter* to Lord Halifax. Towards the end of

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1708, he returned home by way of Switzerland and Germany; but his expectations of a 'place' were disappointed, for the Whigs were out of office. The battle of Blenheim, however, in the next year, presented a brilliant opportunity to him. The ministry wished the victory commemorated in verse, and A. was appointed to do it. Lord Godolphin, the treasurer, was so excessively delighted with the first half of the triumphal poem, that before the rest was finished he made A. a commissioner of appeals. The poet was now fairly involved in politics. He accompanied Halifax to Hanover; became under-secretary of state, 1706, and in 1709 went to Ireland as secretary to the lord-lieutenant, where he also obtained the office of keeper of the records, worth £300 a year. In the same year, his friend Steele commenced *The Tatler*, to which A. soon became a frequent contributor. He also wrote political articles in the *Whig Examiner*. On the 1st of March, 1711, appeared *The Spectator*, the most popular and elegant miscellany in English literature then and for a long time subsequent. With an interruption from 1712, Dec. 6, to 1714, June 15, during part of which time *The Guardian*, a similar periodical, took its place, *The Spectator* was continued to 1714, Dec. 20. A.'s fame is inseparably associated with this periodical. The quality of his genius is now determined by it, rather than by the artificial rhetoric of his *Cato*. He was the animating spirit of the magazine, and by far the most exquisite essays which appeared in it are by him. In 1713 appeared *The Tragedy of Cato*, the popularity of which, considering its total want of dramatic power, was amazing. It was generally understood to have a political as well as a poetical inspiration; but so prudently had A. expressed himself, that both parties, whig and tory, received its frigid declamation with rapture. It was translated into various European languages; and even the monarch of French criticism, Voltaire, held Shakespeare a barbarian in tragedy compared with our author. 'All the laurels of Europe,' says Thackeray, 'were scarcely sufficient for the author of this "prodigious" poem.' Every one in England praised it except Dennis. A. was called the 'great Mr. A.' after that wonderful night in the theatre, when, as Pope says, 'the numerous and violent claps of the whig party on the one side were echoed back by the tories on the other.' This enthusiasm was a delusion which time has effectually dispelled. In 1716, A. married the dowager countess of Warwick, and in the following year was appointed secretary of state. For neither of his new situations was he at all suited. Lady Mary Wortley Montagu, in a letter to Pope, expressed her fear that 'a day might come when he would be heartily glad to resign both.' He was so extremely timid and awkward in large companies, that it was out of the question for him to attempt debating in parliament—a thing indispensable to one in his position. He consequently resigned, 1718. Then as to the other matter, Dr. Johnson sarcastically remarks, that 'the lady was persuaded to marry him on terms much like those on which a Turkish princess is espoused—to whom the sultan is reported to pronounce: "Daughter, I give thee this man for thy slave." No one

ADDITION—ADDLE.

can doubt that this marriage was a mistake on the part of A. His health had been for some time very precarious; and at length, after an illness of a few months, he died at Holland House, Kensington, 1719, June 17, three years after what Thackeray calls 'his splendid but dismal union.' A. had appointed Mr. Tickell his literary executor, who published his works shortly afterwards in 4 vols. quarto. Besides his writings above alluded to, A. wrote *A Treatise on the Usefulness of Ancient Medals, Especially in relation to the Latin and Greek Poets*, which, however, excited little interest. He also left an unfinished work on *The Evidences of the Christian Religion*. But the most delightful and original of all his productions is that series of sketches in *The Spectator* of which Sir Roger de Coverley is the central figure, and Sir Andrew Freeport and Will Honeycomb the side ones. Sir Roger himself is an absolute creation; the gentle yet vivid imagination, the gay and cheerful spirit of humor, the keen, shrewd observation, and fine raillery of foibles which A. has displayed in this felicitous characterization, render it a work of pure genius. But A. in prose is always excellent. He has given a delicacy to English sentiment, and a modesty to English wit which it never knew before. Elegance, which in his predecessors had been the companion of immorality, now appeared as the advocate of virtue. Every grace was enlisted in the cause of a benign and beautiful piety. His style, too, is perfect after its fashion. There are many nobler and grander forms of expression in English literature than A.'s, but there are none comparable to it in sweetness, propriety, and natural dignity. 'Whoever wishes,' says Dr. Johnson, 'to attain an English style, familiar but not coarse, and elegant but not ostentatious, must give his days and nights to the volumes of A.' His various writings, but especially his essays, fully realized the purpose which he constantly had in view, 'to enliven morality with wit, and to temper wit with morality.' They materially helped to reform the manners of their time, and created, in addition, that class of readers which has now become so prodigious in numbers, and on which all literature now depends for its support—the middle class. It must, however, be admitted that since the beginning of the present century, their popularity has had considerable decline. The chief cause of this is, that much in them relates to temporary fashions, vices, rudenesses, and absurdities, now out of date. Yet, after making every abatement, it is certain that there are in the collected works of A. so many admirably written essays on subjects of abiding interest and importance, on characters, virtues, vices and manners, which will chequer society while the human race endures, that a judicious selection can never fail to present indescribable charms to the man of taste, piety, philanthropy, and refinement. See Courthope's *Life* (1884).

ADDITION, etc.: see under ADD.

ADDLE, *v.* *ăd' dl* [AS. *adl*, disease: prov. Sw. *adel*, urine]: to make corrupt. ADDLE or ADDLED, *a.* *ăd' dld*, diseased; putrid; rotten—applied to eggs; barren. ADD'-LING, *imp.* ADDLED, *pp.* *ăd' dld*. AD'DLE-HEAD'ED, *a.* of weak intellect; also AD'DLE-PA'TED, *a.* *-pă' tēd*.

ADDRESS—ADELAIDE.

ADDRESS, *v.* *ăd-drēs'* [*F. dresser*, to direct—from *dresser*, to arrange—from *L. directus*, directed, made straight—*lit.*, to arrange or make ready for immediate use]: to speak to; to write a direction on a letter; to pay court to, as a lover. **ADDRESS'ING**, *imp.* **ADDRESSED**, *pp.* *ăd-drēs't'*. **ADDRESS'**, *n.* a speaking to; direction on a letter; place where to be found; skill or dexterity; manner or mode of behavior; a speech; a written message, as of respect or congratulation. **ADDRESSES**, *n. plu.* *ăd-drēs'ez*, courtship paid to a woman. **ADDRESS'ER**, *n.* one who.—**SYN.** of 'address, *n.*': speech; discourse; oration; harangue; dexterity; tact; management; skill; readiness; adroitness.

ADDRESS, FORMS OF: see **FORMS OF ADDRESS.**

ADDUCE, *v.* *ăd-dūs'* [*L. adducere*, to lead or bring to—from *ad*, *dūcō*, I lead or bring]: to bring to or forward; to offer; to cite; to name. **ADDU'CING**, *imp.* **ADDUCED**, *pp.* *ăd-dūst'*. **ADDU'CER**, *n.* *-ser*, one who. **ADDU'CIBLE**, *a.* *-sī-bl*, capable of being adduced. **ADDUCTION**, *n.* *ăd-dūk'-shūn* [*L. adductus*, led or brought to: *mid. L. adductiōnem*: *F. adduction*]: the act of bringing forward or towards. **ADDUCENT**, *a.* *ăd-dū-sēnt*, bringing forward or together. **ADDUCTIVE**, *a.* *ăd-dūk'tiv*, that adduces; that brings forward. **ADDUC'TIVELY**, *ad.* *-tīv-lī*. **ADDUC'TOR**, *n.* in *anat.*, a muscle that draws one part towards another.—**SYN.** of 'adduce': to allege; assign; advance; offer; present; cite; quote; mention; name.

ADELAAR, *d'dēl-er*, **CORD SIVERTSEN**; 1622–75; *b.* Brevig, Norway: one of the greatest naval commanders of the 17th c. In his twentieth year he was employed in the naval service of Venice against the Turks. On one occasion he broke through a line of 67 Turkish galleys which surrounded his ship, sunk 15 and burned several others. Frederic III., by the offer of the then unheard-of salary of \$7,200 per annum, engaged him as admiral of the Danish fleet; and in 1675, under Christian V., he took the command of the whole of the Danish naval force against Sweden, but died suddenly at Copenhagen before the expedition set out.

ADELAIDE, *ăd'è-lād*: capital of the colony of South Australia; on the Torrens, 7 miles from Port Adelaide, with which it is connected by railway. The first settlement was made in 1836, but already a university has been established at A., and liberally endowed. The Torrens, which is spanned by several bridges, divides the town into North and South Adelaide. The streets of A. are broad and regularly laid out, especially in A. proper, to the south of the river, where they all cross each other at right angles. Among the public buildings are the post-office, the government offices, the governor's house, and the town-hall. It is the seat of an Episcopal and of a Roman Catholic bishop, and has an unusual number of churches. A. also has a large botanical garden, covering more than 120 acres of ground. The town is surrounded by a belt of permanently reserved land, half a mile in width, called the *Park Lands*, and beyond this are the suburbs. A. is abundantly sup-

ADELARTHROSOMATA—ADEN.

plied with water from two reservoirs 6 or 7 m. distant. The chief manufactures are woolen, leather, iron, and earthenware goods; but the chief importance of A. depends on its being the great emporium for South Australia. Port Adelaide, its haven, has a safe and commodious harbor; and in 1882, an ocean dock of 30 acres in extent was begun, capable of admitting the largest ships. A. is the terminus of the direct telegraph line to London across Australia, and has telegraphic communication with the other colonies. The port of A. is the nearest port of call for vessels arriving from Europe either round the Cape or by the Suez Canal; and when the railway connection with Melbourne now being pushed on is complete, passengers and mails for all parts of Australia may be landed here. Tramways for street cars were introduced in 1878. Among other educational institutions are: St. Peter's (Episcopal) College; St. Barnabas Theological College, opened 1881; and Prince Alfred (Wesleyan) College. Besides the chief religious denominations, here are represented Swedenborgians, Friends, Unitarians, and Jews. A. has daily and weekly newspapers. Pop. (1871), 27,208; (1881), 37,892.

ADELARTHROSOMATA, n. plu. *ăd'ê-lăr-thrō-sō'mă-tă* [Gr. *adēlos*, hidden; *arthros*, a joint; *sōma*, body; *sōmata*, bodies]: an order of the Arachnida, comprising the harvest-spiders, book scorpions, etc.

ADELPHOUS, a. *ăd'ēlf'ūs* [Gr. *adelphos*, a brother, a blood relation]: related; in *bot.*, having a union of filaments.

ADELSBERG, *ă'dēls-bĕrg*: district and market-town in Carniola, in the vicinity of which is a large stalactite cavern called the *A. Grotto*, through which flows a rapid stream. This cavern, the largest in Europe, is divided into the Old and the New Grotto; the former is 858 feet in length; the latter, 8,550 feet in length, contains some most remarkable stalactites, among which is 'the curtain' (*vorhang*), a white semi-transparent wall. The town of A. is 22 m. n.e. of Trieste.

ADELUNG, *ă'dēh-loong*, JOH. CHRISTOPH, 1732-1806; b. Pomerania; d. Dresden, distinguished linguist and lexicographer. At Dresden he had held the office of chief-librarian. His chief works are his *Wörterbuch der Hochdeutschen Mundart* (Dictionary of High German), in which he took Dr. Johnson as his model; and his *Mithridates oder allgemeine Sprachenkunde*, a work on general philology.

ADEN, *ă'dēn* or *ă'dēn*: peninsula and town on the s.w. coast of Arabia, about 100 miles e. of the strait of Bab-el-Mandeb. This peninsula is doubtless of volcanic origin, and consists chiefly of a range of hills not exceeding 1,776 feet in height. It is joined to the mainland by a narrow, level, and sandy isthmus. In a valley which forms the crater of a submarine volcano stands the town of A. The area of the peninsula is about 5 sq. m.; but to provide for the growing population, an area of 34 square miles on the mainland has since 1880 been added. The town of A. is in an indescribably barren district; the heat is intense. A. suffers from want of water; and though it is sometimes called 'healthy

ADENITIS.

on the whole,' other accounts make it a very hot-bed of disease. Pliny know of the place, whose name he writes 'Athana.' It was known also by the name of 'Emporium Romanum.' Up to the time of the circumnavigation of Africa, A., so favorably situated at the entrance of the Red Sea, was the chief mart of all Asiatic produce and manufactures, and even the Chinese traded here. Marco Polo and other voyagers of the middle ages told wonders of the riches and splendor of the place. In the course of time, however, it was reduced to a small village, which, 1838, contained only about 600 inhabitants, including some 250 Jews and about 50 Indian merchants. The increasing importance of the Red Sea route to India gave great value to A. as a station for England to hold; and in 1838 the Arab sultan was persuaded to cede the peninsula to England. He afterwards repented of the bargain, but was held to his contract by force of arms; and 1839, Jan. 11, after a few hours' contest, A. fell into the hands of the British. Here they have now a strong garrison and fortifications. In its mediæval prosperity, A. had had a magnificent system of cisterns for collecting the rain-water from the circle of hills that surround it. Who built them is unknown; but it is conjectured that they had been begun about the 6th or 7th c. They had been allowed to fall into disuse, and were filled with rubbish, and in ruins; but recently a considerable number have been excavated and restored by the British government. If all restored, they seem capable of containing 30,000,000 gallons. A. is of great importance in a mercantile and nautical point of view, having a position between Asia and Africa like that of Gibraltar between Europe and Africa. The population and resources of the place have rapidly increased since 1838, and the opening of the Suez Canal in 1869 gave it a great impetus. The annual values of its imports and of its exports range from below to a little above \$5,000,000. A. is a telegraphic station on the cable between Suez and Bombay, laid down in 1870. Pop. (1881), 34,860, of whom over 27,000 are Mohammedans.

ADENITIS, *ād'ē-nī'tīs* (see ADENOLOGY) AND ANGEIO-LEUCITIS: terms employed in medicine to indicate inflammation of the lymphatic glands and inflammation of the lymphatic vessels respectively. In most instances of inflammation in the absorbent or lymphatic system, the vessels and glands are simultaneously involved. Although there is plenty of evidence, from the examination of the dead body, that inflammation of the lymphatics may occur internally, it is observed in the living subject in connection only with the skin or an ulcerated surface. The disease originates usually in an open wound of almost any form, as a puncture, a cut, or a blister. This wound is directly infected by some morbid matter, as, for example, some local inflammatory product, such as the putrid secretion of a sore; but more commonly by some irritating or poisonous matter from without, or some gaseous matter. The inflammation that is thus set up in the lymphatics always extends upwards from the wound, and may be traced by lines of redness following the course of these vessels, and not of the veins, and terminating

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where the inflamed vessels enter a gland. In the arm, for example, they never pass the armpit, in which the axillary glands lie. The tenderness along these inflamed tracts is excessive, and extends to the next gland, which appears to arrest the further progress of the poisoned lymph, by becoming itself inflamed. The degree of inflammation of the gland may vary from slight enlargement with tenderness on pressure, to profuse suppuration. The suppuration may not take place till a week or more after the inflammation of the vessels has subsided, and may excite no rigors or other constitutional symptoms; and a patient may be quite unconscious of any serious ailment, when half a pint or more of matter may be collecting in and around a gland in the armpit. The constitutional symptoms attending an attack of acute inflammation of the lymphatic vessels (*angioleucitis*) are often severe, and are thus summed up by Mr. Moore in his essay 'On Diseases of the Absorbent System' in Holmes's *System of Surgery*: 'Rigors, nausea, and vomiting, heat of skin, thirst, dryness and coating of the tongue, with constipation, sleeplessness, and a feeling of languor, are usually the severest accompaniments of the disease. If the fever be typhoid, if there be profuse fetid sweats, severe muscular pains, high excitement, or dry burning heat of the skin, and marked delirium, the poison is no longer limited within the lymphatic channels, but has infiltrated the cellular tissues, and has tainted the blood. As the inflammation subsides, a cutaneous eruption or fetid discharge from the bowels comes on, and the general symptoms become those of exhaustion.'

The following observations on the treatment of inflamed absorbents are taken mainly from Mr. Moore's essay. Many of the ordinary duties of life perpetually expose manual laborers and others to this painful affection. In the way of prevention, the practice of smearing the hands with oil or grease before touching noxious fluids, is found to prevent the mischief which might arise from absorption by a cut or sore, and is a useful precaution in dissection and in post-mortem examinations; and there can be no doubt that the timely application of a layer of collodion or of court-plaster might avert many attacks of inflamed absorbents. When symptoms of this form of inflammation supervene, the wound should be thoroughly cleansed, by being laid more open, if all its parts are not freely exposed, and then put under a stream of water, syringed, or soaked in a hot bath, as may seem most suitable. If recent or punctured, it should be sucked, and then freely touched with a pencil of nitrate of silver. If flabby, it should be treated with a stimulating lotion of sulphate of zinc or of copper; if fetid, it should be wrapped in a solution of Condyl's Fluid, or in chlorinated lotions; and if sloughy, it should be covered with Peruvian balsam and a poultice of linseed meal, charcoal, or yeast. A warm poultice of one of these kinds, frequently changed, is usually the most soothing application. At the same time, nitrate of silver should be two or three times drawn along the red tender lines indicating the course of the lymphatics, after which the arm should be enveloped in cotton-wool,

ADENOCELE—ADERSBACH ROCKS.

and perfect rest in a comfortable position enjoined. Due attention must at the same time be paid to the general condition of the system, and especially to the condition of the intestinal secretions.

ADENOCELE, *a-dē'no-sēl* [Gr. *adēnē*, a gland, and *kēlē*, a tumor]: term now employed in surgery to indicate a kind of new growth in the female breast, the tissue of which closely resembles the breast-tissue itself. It is synonymous with the terms 'Chronic Mammary Tumor,' 'Pancreatic Sarcoma,' 'Mammary Glandular Tumor,' 'Hydatid Disease of the Breast,' 'Serocystic Sarcoma,' etc. The diversity of names indicates the diversity of the outward forms seen in these growths. A full account of these tumors, and of the treatment to be adopted (which consists in excision), is given in Mr. Birkett's article, 'On Diseases of the Breast,' in Holmes's *System of Surgery*.

ADENOLOGY, *n.* *ād'ē-nōl'ō-jī* [Gr. *adēn* or *adēna*, a gland; *lōgos*, discourse]: that part of anatomy which treats of the glands, their nature, and their uses. **ADENIFORM**, *a.* *-ī-fawrm* [L. *forma*, shape]: formed or shaped like a gland. **ADENITIS**, *n.* *ād'ē-nī'tis*, glandular inflammation. **ADENOSE**, *a.* *ād'ē-nōz*, also **ADENOUS**, *a.* *ād'ē-nūs*, gland-like. **ADENOID**, *a.* *ād'ē-noyd*, occurring in, or connected with glands. **ADENOGRAPHY**, *n.* *ād'ēn'ōg'rā-fī* [Gr. *grāpho*, I write]: a treatise on the glands. **ADENOMA**, *n.* *ād'ē-nō'mā*, [Gr. *sōma*, a body]: a tumor involving a gland.

ADEPT, *n.* *ā-dēpt* [L. *adeptus*, got, attained]: one thoroughly versed in; one fully skilled in anything. **ADJ.** thoroughly versed in; skilful.

ADEQUATE, *a.* *ād'ē-kwāt* [L. *adæquātus*, made equal to or level with—from *ad*, *æquātus*, made equal or like—from *æquus*, even, equal—*lit.*, made equal to]: fully sufficient for; equal to. **ADEQUATELY**, *ad.* *-lī*, in an adequate manner. **ADEQUACY**, *n.* *ād'ē-kwā-sī*, the being equal to; sufficiency for an end. **ADEQUATENESS**, *n.* the state of being adequate.—**SYN.** of 'adequate': sufficient; competent; proportionate; commensurate; equal to; enough.

ADERNO, *ā-dār'nō* (ancient *Adranum*): town of Sicily, 17 m. n.w. from Catania; at the base of Mount Etna, close to the Simeto, on which are some remarkable cascades near the town. It is surrounded by walls, is a very clean town, and is full of convents and nunneries, mostly founded by the Normans, so that bare walls of lava and grated windows appear everywhere, and the sound of bells is almost incessantly heard. Pop. 19,600.

ADERSBACH ROCKS, *ā'dērs-bāk*: a remarkable labyrinthine group of sandstone rocks near the village of Adersbach, Bohemia. The aspect of some parts of the group has been compared to that of a city ruined by a conflagration. One of the pinnacles rises to a height of 218 feet. The structure of the rocks has been produced, not by any commotion of the earth, but by the influences of rain, frost, and other atmospheric changes, wearing down the soft sandstone into many fantastic forms. During the Thirty Years' War, the miserable people of Bohemia often found refuge here.

ADESMY—ADHESION.

ADESMY, n. *äd'ës-mǐ* [Gr. *a*, not; *desmos*, skin]: in *bot.*, the division or splitting of an organ usually entire. **ADESMACIOUS**, *äd'ës-mä'shüs*, in *zool.*, having the shell not covering all the body, while the mantle is completely closed and tubulous.

ADFFECTED, a. *äd-fëkt'ëd* [L. *ad. factus*, done]: in *alg.*, consisting of different powers of the unknown quantity.

ADHERE, v. *äd-hër'* [F. *adhérer*, to adhere—from L. *adhærere*, to stick or hang on—from *ad*, *hærëo*, I stick]: to stick to; to cleave to; to hold to, as an opinion. **ADHE'RING**, imp. **ADHERED**, pp. *äd-hërd'*. **ADHERENCE**, n. *äd-hë'rëns* [F. *adhérence*]: attachment to. **ADHE'RENCY**, n. *-rën-sǐ*, the act of sticking or adhering to. **ADHE'RENT**, n. *äd-hë'rënt* [F. *adhérent*]: one who adheres to; a follower. **ADJ.** sticking; adhering; united with; in *bot.*, denoting the union of parts that are normally separate and in different verticils. **ADHE'RENTLY**, ad. *-lǐ*. **ADHE'RER**, n. *-rër*, one who adheres. **ADHESION**, n. *äd-hë'zhün* [L. *adhæsus*, clung to, adhered to: F. *adhésion*, adhesion]: applied to *matter*—the act of sticking to; a union of parts of any body by means of cement, glue, growth, etc.; in *surg.*, the reunion of parts that have been severed; steady attachment. **ADHESIVE**, a. *äd-hë'siv*, that will stick; gluey; sticky. **ADHE'SIVELY**, ad. *-lǐ*. **ADHE'SIVENESS**, n. the quality of sticking or adhering; tenacity.—**SYN.** of 'adhere': to cleave to; stick to; attach to; cling to; fix on; hold to;—of 'adherent, n.': follower; adherer; partisan; disciple; supporter; upholder; dependent.

ADHESION (see **ADHERE**): the species of attraction manifested between two separate bodies when their surfaces are brought to a considerable extent into close contact. It is nearly allied to cohesion (q.v.). Adhesion is seen in the case of two solid bodies when their polished surfaces are laid on one another; but it acts more powerfully between solids and fluids, owing to their intimate contact. We have instances of this in the film of water adhering to any body dipped in that fluid, and in water running down the side of an inclined vessel from which it is being poured. All solids and liquids do not exhibit this mutual attraction. Thus, though bright metals are wetted by mercury, glass and wood are not; nor does water adhere to fat. Capillary attraction (q.v.) is a special manifestation of adhesion.—The adhesion of gases to the surface of solids is described by Liebig as acting an important part in many processes. A more or less condensed atmosphere of gases surrounds every body, and every particle of a powdered or porous body; and gases, such as oxygen, have in this condition an intensified chemical action. Platinum in the state of powder condenses 800 times its volume of oxygen; and when hydrogen comes in contact with the oxygen in this state, the two gases combine, though, when free, they require the application of flame before they will combine.

ADHESION, in Pathology, is when two surfaces of a living body become united. If they have been separated by the cut of a sharp instrument, and are immediately and accurately placed in apposition to each other, they may adhere at

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once without any apparent bond of union. But, usually, the blood-vessels of the part pour out, between the surfaces, a fluid, consisting of the watery part of the blood holding fibrine in solution. The liquid part of this is reabsorbed or escapes from the wound, leaving the fibrine, in which first cells are developed, and then blood-vessels: it is now a living tissue, and forms a uniting medium between the sides of the wound.

Serous membranes, as the pleura, pour out this fluid when inflamed; and hence the adhesions so often the result of pleurisies.—If two granulating surfaces be kept in contact, the opposite granulations may fuse together, and the wound unite by secondary adhesion. See GRANULATION.

ADHIBIT, *v.* *ăd-hīb'it* [L. *adhībītus*, added to—from *ad*, *habēō*, I have or hold—*lit.*, to hold or apply to, as to some other object]: to put to; to use or apply. **ADHIB'ITING**, *imp.* **ADHIB'ITED**, *pp.* **ADHIBITION**, *n.* *ăd hī-bīsh'ūn*, application; use.

ADIAN'TITES, *n. plu.* *ăd'ī-ăn'tīts* or *-tī'tēz* [Gr. *adīāntos*, unmoistened]: a genus of fossil ferns found in the coal-measures, so called from their resemblance to the existing *adiantum*, or maidenhair.

ADIAN'TUM, *n.* *ăd'ī-ăn'tūm* [Gr. *adīānton*, the herb maiden-hair—from *adīāntos*, not moistened; so called from the belief that they will remain dry, though plunged among water]: maidenhair, an elegant genus of ferns with beautiful leaves.

ADIAN'TUM: see **MAIDENHAIR**.

ADIAPHOROUS, *a.* *ăd'ī-ăf'ō-rūs* [Gr. *adiāphōrōs*, indifferent, common—from *a*, not; *diāphērō*, I carry through]: in *OE.*, indifferent; neutral. **ADIAPH'ORIST**, *n.* one who is indifferent; a neutral.

ADIEU, *n. ad. interj.* *ă-dū'* [F. *à*, to; *Dieu*, God—a contracted form of the *OF.* *à Dieu soyez*, may you be with God]: I commend you to God; a farewell; an expression of regard or kind wishes on parting.

ADIGÉ, *ad'ī-jē*: the most important river in Italy after the Po; rises in the Rhætian Alps. Various streamlets descend from these mountains, and, uniting at Glarus, form the Etsch, which is, properly speaking, the beginning of the A., and the name by which the entire river is known in Germany. From Glarus it flows e. into the Tyrol; then, after a slight *détour* to the s.e., it flows due s. past Trent and Roveredo, into Lombardy, and, passing Verona, takes a s.e. sweep, discharging its waters into the Adriatic, between the mouths of the Po and the Brenta. In ancient times (when it was called the *Athesis*), it had a more northerly *embouchure*. It is very rapid, and subject to sudden swellings and overflows, which cause great damage to the surrounding country. The two most remarkable inundations on record are those in 1721 and 1724. During the Italian wars, its banks were repeatedly the scenes of bloody engagements. Its length is about 250 m.; its breadth in the plain of Lombardy, 650 ft.; its depth, from 10 to 16 feet. It is navigable

ADIPIC—ADIRONDAKS.

as far as Trent, but the navigation is extremely arduous, on account of the swiftness of the current. The A. is a transit-river for the trade of Germany and Italy.

ADIPIC, a. *ăd'î-pîk* [L. *adeps* or *adîpem*, fat]: denoting a fatty acid procured from the action of nitric acid on oleic acid; denoting one of the dibasic fatty acids.

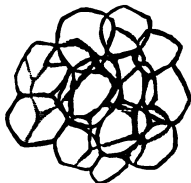
ADIPIC ACID ($C_{12}H_{22}O_6, 2HO$): a dibasic acid of the oxalic series, having the general formula $C_{2n}H_{2n-2}O_6$; obtained in the form of white, opaque, hemispherical nodules (probably aggregations of small crystals), by the oxidizing action of nitric acid on oleic acid, suet, spermaceti, and other fatty bodies. The name is derived from the Latin *alaps*, fat, and must not be confounded with that of a similar acid of the same group, known as *Sebacic Acid*.

ADIPOCERE, n. *ăd'î-pô-sēr'* [L. *adeps*, fat; *cēră*, wax]: a light, waxy, or fatty substance, of a whitish-gray color, into which animal flesh is changed when buried in moist earth; often found in burial-grounds—hence called 'grave-wax'—in peat-bog, etc. **ADIPOCEROUS**, a. *ăd'î-pôs'ēr-ūs*, pertaining to. **ADIPOCERITE**, n. *ăd'î-pôs'ēr'it*, the fatty or waxy matter found in certain peat-mosses. **ADIPOCERE MINERAL**, a fatty waxy substance found in certain coal-formations.

ADIPOCERE: a substance resembling a mixture of fat and wax, resulting from the decomposition of animal bodies in moist places or under water. Human bodies have been found, on disinterment, reduced to this state. Lean beef kept under running water for three weeks, was found reduced to a fatty substance. A piece of a liver that has suffered what is called fatty degeneration, if immersed for some time in water, is said to become exactly like A.

ADIPOSE, a. *ăd'î-pôs* [L. *adîpōsus*, fatty—from *adeps*, fat]: denoting the fatty tissue which exists more or less throughout the body. **ADIPOSIS**, n. *ăd'î-pôs'is*, great fatness or obesity of the human body.

ADIPOSE TISSUE: a peculiar kind of animal membrane or tissue, consisting of an aggregation of minutes pherical pouches or vesicles filled with fat or oil. The tissue itself is organic and vital, the vesicles secreting the fatty matter from the capillary blood-vessels with which they are surrounded; the secreted product, or fat (q.v.), is inorganic, and devoid of vitality. The adipose tissue differs from cellular or filamentous tissue in having the vesicles closed, so that the fat does not escape even when fluid. A dropsical effusion, which infiltrates the filamentous tissues, does not affect the adipose tissue. There is a considerable layer of adipose tissue immediately under the skin; also around the large vessels and nerves, in the omentum and mesentery, around the kidneys, joints, etc.



Adipose Tissue,
magnified.

ADIRONDAKS, *ăd'î-rôn'dăks*: a mountainous region situated in the northern part of the state of New York,

ADIT—ADJACENT.

having Lakes George and Champlain on the e., Canada on the n., and the St. Lawrence river on the n.w., while on the s. it reaches nearly to the Mohawk river. In its midst an elevated plateau, 2,000 ft. above the level of the sea, extends over an area 150 m. by 100, and five ranges of mountains, running nearly parallel with each other, traverse this plateau from s.w. to n.e., terminating at Lake Champlain. The most westerly of these ranges is the Adirondack, or Clinton Range, which begins at Little Falls and terminates at Lake Champlain. The highest peaks of the region are found in this range, including Mt. Marcy, 5,337 ft. high; and Mts. Seward, McIntyre, and McMartin, Snowy Mountain, Mt. Pharaoh, Whiteface, Dix Peak, Santanoni, and Colden are each nearly 5,000 ft. in height—the general elevation of the range being greater than that of any other east of the Rocky Mountains. There are supposed to be in all as many as 500 separate mountains in the Adirondacks, very few of which have distinctive names. They all are densely wooded, except the summits of the loftiest, which are rocky with only a scattered growth of moss and shrub pines. The valleys of the region are dotted with lakes, large and small, to the number of perhaps 1,000, the highest elevation reached by any of these being that of Lake Perkins, nearly 4,500 ft. above the level of the sea. Some of these lakes are 20 m. or more in length, while many others have an extent of only a few acres each. The largest are Long Lake, the Upper and Lower Saranac, Tupper, the Fulton Lakes, Pleasant, Raquette, Forked, Newcomb, Colden, Blue Mountain, Eckford, Sanford, and Henderson. This series of lakes is connected by a system of rivers and small streams, of which the Saranac and Ausable are among the most important, emptying into Lake Champlain, after a general n.e. course. The largest is the Raquette, which rises in Raquette Lake in the w. part of Hamilton county, is 12 m. long, and discharges its waters into the St. Lawrence. The forests of the A. include the evergreens, and birch, poplar, maple, and ash, while the vast swamps are almost impenetrable with a thick growth of cedar, tamarack, and hemlock. Deer abound and the black bear, wolf, wild-cat, lynx, and wolverine are common. Small animals are plentiful, including sable, otter, mink, fox, muskrat, badger, woodchuck, rabbit, and varieties of the squirrel. The lakes and streams swarm with trout, and game birds and other birds are found in large numbers. Travel through the A., which are greatly favored by summer tourists, is chiefly in small, light boats, easily carried by the guides between the lakes and streams. The region is reached by rail from Saratoga, and from various points on Lake Champlain.

ADIT, n. *ăd'it* [*L. aditus*, an approach or entrance—from *ad.* to; *itus*, gone—*lit.* a going to, an approach or entrance]; an under-ground gallery or tunnel into a mine for carrying off water or for extracting the ore.

ADJACENT, a. *ăd-jă'sent* [*L. adjācens* or *adjācēn'tem*, adjacent or contiguous—from *ad, jāc'o*, I lie]; lying near; bordering upon; contiguous. **ADJACENTLY**, ad. *-lī*. **ADJA-**

ADJECT—ADJUDGE.

CENCY, n. *äd-jä'sën-si*, the state of being adjacent or contiguous.

ADJECT, v. *äd-jëkt'* [L. *adjectus*, added, cast to—from *ad*, *jactus*, cast]: to add or put to. ADJECT'ING, imp. ADJECTED, pp. *äd-jëkt'ëd*. ADJECTION, n. *äd-jëk'shün*, the act of adding. ADJECTITIOUS, a. *äd-jëk-tish'üs*, added to or on. ADJECTIVE, n. *äd-jëk-tiv*, a word put to a noun to modify its meaning: ADJ. qualifying; depending on another. ADJECTIVAL, *äd-jëk-tiv'ül*, a. pertaining to; having the import or construction of an adjective. ADJECTIVE'LY, ad. *tiv'li*.

ADJECTIVE: name of one of the classes into which grammarians have divided words; so called, not so much from its *being added* to a substantive, as because it *adds* to the meaning, or more exactly describes the object, than the simple substantive or general name does. The effect of an A. is also to limit the application of the name to which it is joined. Thus, when *tall* is joined to *man*, there is more meaning conveyed; there are more properties suggested to the mind by the compound name *tall man*, than by the simple name *man*; but *tall man* is not applicable to so many individuals as *man*, for all men that are not tall are excluded.—Nouns, or names of things, are often used in English as adjectives; thus, we say a *silver chain*, a *stone wall*. In such expressions as 'Income Tax Assessment Bill,' *Income* plays the part of an A. to *Tax*, which is, in the first place, a noun; the two together then form a sort of compound A. to *Assessment*; and the three, taken together, a still more compound A. to *Bill*, which, syntactically, is the only noun in the expression.—Languages differ much in their way of using adjectives. In English, the usual place of the A. is before the noun. This is the case in German also; but in French and Italian, the A. comes after. In these languages again, the A. is varied for gender, number, and, in the German, for case. In English it is invariable; and in this simplicity there is a decided superiority; for in modern languages these changes in the A. serve no purpose. The only modification the Eng. A. is capable of is for degrees of comparison.

ADJOIN, v. *äd-joyn'* [F. *adjoindre*, to assign as a colleague—from L. *adjun'gërë*, to bind or join to a thing—from *ad*, *jungō*, I join—*lit.*, to bind or join to]: to lie next to; to lie close to. ADJOIN'ING, imp. ADJOINED, pp. *äd-joynd'*.

ADJOURN, v. *äd-jërn'* [OF. *adjourner*, to cite one to appear on a certain day—from mid. L. *adjornārë*, to fix the day—from L. *ad*, to; F. *jour*, a day: mid. L. *jornus*, a day, or the labors of a day: L. *diēs*, a day—*lit.*, to fix a day which is named]: to put off from one day to another; to delay. ADJOURN'ING, imp. ADJOURNED, pp. *äd-jërnd'*. ADJOURNMENT, n. the putting off to another day; the time or interval during which the business is suspended.—SYN. of 'adjourn': to prorogue; postpone; delay; defer; put off.

ADJUDGE, v. *äd-jüj'* [F. *adjuger*—from L. *adjudicārë*, to adjudge, to grant—from *ad*, *judicō*, I judge]: to determine, to decide; to award sentence. ADJUDGE'ING, imp. AD-

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JUDGED, pp. *äd-jüjd'*. **ADJUDG'MENT**, n. the act of adjudging; a sentence.—**SYN.** of 'adjudge': to adjudicate; award; determine; decree.

ADJUDICATE, v. *äd-jó' dī-kāt* [L. *adjudicātus*, awarded, adjudged—from *judico*, I judge—*lit.*, to give sentence in behalf of]: to pronounce judgment upon, to try or determine, as a court does. **ADJU'DICAT'ING**, imp. **ADJU'DICAT'ED**, pp. **ADJUDICATION**, n. *äd-jó' dī-kā' shūn*, the pronouncing judgment upon; the decision or award of a court. **ADJU'DICA'TOR**, n. *-kāt'er*, one who.

ADJUDICATION: see **BANKRUPTCY**; **INSOLVENCY**.

ADJUNCT, n. *äd-jüñkt* [L. *adjunctus*, joined or fastened on to—from *ad*, to, *jungo*, I join]: something added or joined on; something added to another, generally to modify or qualify: **ADJ.** assisting. **ADJUNCT'LY**, ad. *-lī*. **ADJUNCTION**, n. *äd-jüñk' shūn*, the act of joining; the thing joined. **ADJUNC'TIVE**, a. *-tīv*, joining; tending to join. **N.** that which is joined. **ADJUNC'TIVELY**, ad. *-lī*.

ADJURE, v. *äd-jór'* [F. *adjurer*, to adjure—from L. *adjurāre*, to swear solemnly—from *ad*, *juro*, I swear—*lit.*, to swear to, that is, on oath]: to charge solemnly; to bind on oath. **ADJU'RING**, imp. **ADJURED**, pp. *äd-jórd'*. **ADJURATION**, n. *äd-joo-rā' shūn*, the act of solemnly charging on oath; a solemn charge on oath; the form of an oath. **ADJU'REE**, n. one who.

ADJUST, v. *äd-jüst'* [OF. *adjuster*, to make, to meet—from mid. L. *adjūstārē*, to make right—from L. *ad*, *justus*, just or proper]: to make right or fit; to fit to; to make to correspond; to put in order; to settle. **ADJUST'ING**, imp. **ADJUST'ED**, pp. **ADJUST'ABLE**, a. *-ā-bl*, that may be adjusted. **ADJUSTMENT**, n. *äd-jüst'měnt*, the act of settling; a settlement; brought to an agreement; in *mech.*, an apparatus for regulating the movement of machinery. **ADJUST'IVE**, a. *-iv*. *Note.*—**ADJUST** may also come from OF. *ajouster*, to arrange—from mid. L. *adjūstārē*, to put side by side—from *ad*, to, and *juxta*, near—*lit.*, to put side by side: see Brachet and Skeat.—**SYN.** of 'adjust': to arrange; accommodate; ask; set right; rectify; settle; adapt; suit; regulate.

ADJUSTMENT, in the Law of Insurance: the ascertaining the exact amount of indemnity which the party insured is entitled to receive under the policy, and fixing the proportion of the loss to be borne by each underwriter. The nature and amount of damage being ascertained, an endorsement is made on the back of the policy, declaring the proportion of loss falling on each underwriter; and on this endorsement being signed by the latter, the loss is said to have been adjusted. After an A. has been made, it is usual for the underwriter at once to pay the loss. As a question of law, however, it does not appear to have been decided how far the A. is conclusive and binding upon the underwriters. In the opinion of some mercantile lawyers, the A. is merely presumptive evidence against an insurer, and it is, notwithstanding, open to the underwriter to show facts which, if proved, would have the effect of relieving him from liability.

ADJUTANT, n. *äd-joo-tānt* [L. *adjütāns* or *adjütan'tēm*,

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helping, assisting—from *ad. yuvārē*, to assist; *jūtus*, assisted]: staff officer of a battalion of infantry, a regiment of cavalry, or a brigade of artillery; in a regiment, one who assists the field-officers, and superintends the drill and office work; a very large species of stork. **ADJUTANCY**, *n. ād'jo-tān'sī*, the office of the adjutant. **ADJUTOR**, *n. ād-jō'tēr*, any one who assists. **ADJUTRIX**, *n. ād-jō'triks*, a woman-helper. **AD'JUVANT**, *a. helping*. **N.** an assistant; an ingredient in a recipe which assists the operation of the principal drug. **ADJUTANT-GENERAL**, one of the chief staff officers of an army whose duties comprise all matters relating to discipline, and the general efficiency of the army.

ADJUTANT: an officer who assists the commanding-officer of a garrison or regiment in all the details of duty. He receives orders, and promulgates them to the several companies; he inspects escorts and guards before proceeding on their duty; attends to the drill of recruits, is accountable for the keeping of the regimental books, and ought to note every infraction of established rules. An *adjutant-general* performs analogous duties for the general of an army. He keeps an account of the strength of each regiment, distributes the orders of the day to the brigade-majors, and sees the troops drawn up for action. In the British army, the *Adjutant-general of the Forces* is an officer of high rank at the Horse-Guards. To him all communications are addressed regarding leave of absence, discharging, recruiting, etc. Besides the adjutant-general at the Horse-Guards, there are deputy and assistant adjutants-general for special military districts.

ADJUTANT (*Ciconia Argala*), a bird closely allied to the Stork, made by some naturalists the type of a separate genus, *Argala*. **A.** is a popular name given to it by the English in India—*Argala* the native name. It is a native



Indian Adjutant.

of the warmer parts of India. It is of large size, and has very long legs; in its erect attitude, it is about five feet high; its extended wings measure fourteen or fifteen feet from tip to tip; its head and neck are nearly bare; a sausage-like pouch hangs from the under part of the neck; the bill is of enormous size. It is very voracious, swallows a cat or a leg of mutton quite readily, and is of great use in devouring snakes, lizards, and all sorts of offal. It sometimes catches birds upon the wing. The beautiful

Marabou feathers are obtained from the under side of the

ADJYGURH—ADMINISTER.

wings of this bird, and of another very similar species which inhabits Senegal.

ADJYGURH, *ād-jī-gēr'*: town of British India, in the n. w. Provinces, province of Allahabad, 69 m. w. n. w. from Rewah. It has a fortress, situated on a very steep hill, accessible only by well-defended paths. The hill, of granite, is isolated, and separated from the n. w. edge of a plateau by a very deep and impassable ravine. Within the walls of the fort are two great masses of ruins of temples, resembling in architectural character those of Southern India, and covered with the most elaborate sculptures. A. was for a short time the capital of a small Mahratta state, was taken by the British under Lieut. Col. Martindell, 1809, after an obstinate resistance, and restored to its previous possessors, who were Rajpûts. The native line of rajahs became extinct, 1855. Except the summit of the hill, occupied by the fort, which is healthful, A. is very subject to malaria. The fort is 860 feet above the town, which is 480 feet above the sea. Pop. about 5,000.

AD LIBITUM, *ād lib'ī-tūm* (in Ital., *a piacere*, or *a piacimento*): a musical term which implies that the part so marked may be performed according to the taste of the performer, and not necessarily in strict time. When there is an accompaniment to the music thus marked, it must strictly follow the *ad libitum* time of the principal performer. Sometimes the words *colla parte*, meaning with the leading part, are written over the accompanying parts. *Ad Libitum* also frequently means, that a part for a particular instrument or instruments, in instrumental scores or pianoforte arrangements, may either be played or entirely left out; thus: 'Overture arranged for the pianoforte as a duet, with *ad libitum* accompaniments for the violin, flute, or violoncello.'

ADMEASUREMENT, n. *ād-mēzh'oor-mēnt* [L. *ad*; and Eng. *measure*]: adjustment of proportions; art or practice of measuring according to rule.

ADMINICULAR, a. *ād'mīn'īk'ū lēr* [L. *adminic'ulum*, a prop, a support—from *ad*, *mīnēo*, I jut, I project]: helping, as a support; giving help; subordinate to.

ADMINISTER, v. *ād'mīn'īs-tēr* [F. *administrer*—from L. *administrārē*, to administer—from *ad*, *mīn'istro*, I serve or assist—*lit.*, to serve or attend upon]: to give or tender, as an oath; to direct the application of laws, as a king or judge; to manage; to dispense, as justice; to add to; to bring aid or supplies to. **ADMINISTERING**, imp. *ād'mīn'īs-trīng*. **ADMINISTERED**, pp. *ād'mīn'īs-tērd*. **ADMINISTRATION**, n. *ād'mīn'īs-trā'shūn*, the act of carrying into effect; direction; the government of a country; the act of organizing, supplying, and equipping the military forces of a country. **ADMINISTRABLE**, a. *ād'mīn'īs-trā-bl*, capable of being administered. **ADMINISTERIAL**, a. *-tēr'ī-āl*, ministerial. **ADMINISTERIALLY**, ad. *-lī*. **ADMINISTRATIVE**, a. *ād'mīn'īs-trā'tiv*, able to carry into effect. **ADMINISTRATOR**, n. *tēr*, the man who carries into effect; one who directs. **ADMINISTRATRIX**, n. *ād'mīn'īs-trā'trīks*, the woman who carries into effect or directs. **ADMINISTRATORSHIP**, n. the office of an administrator.—**SYN.** of 'administer': to min-

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ister; supply; manage; contribute; conduct; apply; dispense;—of 'administration': charge; care; management; control; government; conduct; regulation; direction; distribution; dispensation; execution.

ADMINISTRATION, in Politics: in its widest sense, is equivalent to the executive government of a state as distinguished from its permanent constitution, and embraces not only the political ministry, but all the offices of judicature, etc. In a more restricted sense, as used in the United States, it designates the president and his cabinet. In England it designates the privy counsel (q.v.), and more especially that select committee of it known as the cabinet or ministry (q.v.).

ADMIRAL, n. *ăd'mî-răl* [mid. L. *admîrăl'lus*, a commander, a prefect: F. *amiral*—from Ar. *al*, the; *emîr* or *amîr*, a noble or chief in command: Sp. *admirante*]: the commander of a fleet or navy; a flag officer. **ADMIRALTY**, n. *ăd'mî-răl'tî*, the supreme government in naval affairs; the building in which the governing body sits. **AMMIRAL**, for **ADMIRAL**, in Milton. *Note*.—*Second* in rank to an **ADMIRAL** is a **VICE-ADMIRAL**, and *third* is a **REAR-ADMIRAL**; the whole are of three grades, according to the color of their flags,—rank 1st, red flag, and holds the centre in an engagement; rank 2d, white flag, and holds the van; rank 3d, blue flag, and holds the rear.

ADMIRAL: title of the highest rank of naval officers. The word is generally supposed to have been derived from the Arabic *Emîr* or *Amîr*, a lord or chief (*Amîr-al-Mumenim*, 'Commander of the Faithful'; *Amîr-al-Omra*, 'Commander of the Forces'). Thus the early English form was *Amiral* or *Amirail* (occurring once in *Par. Lost*); and so it is still preserved in French. In Spanish the word is *Admirante* or *Almirante*; in Italian, *Ammiraglio*. The term seems to have been introduced into Europe during the Crusades, and to have been first used in a definite sense by the Sicilians, and afterwards by the Genoese. About the end of the 13th c. it came into use in France and England. The first English Admiral of the Seas (*Amiral de la Mer du Roy d'Angleterre*) of whom there is record was William de Leybourne, 1286. His office, however, was not that of a commander, but embraced those general and extensive powers afterwards associated with the title of Lord High Admiral of England; that is, both the administrative functions now vested in the *Lords Commissioners of the Admiralty* (five in number), and the judicial authority belonging to the present *High Court of Admiralty*. The office of Lord High Admiral was last filled by H.R.H. the Duke of Clarence, afterwards William IV. It had previously been in commission from 1708 to 1827. On his resignation in 1828, the office was again put in commission. See **ADMIRALTY**, **COURT OF**.

In the British navy, the admirals are distinguished into three classes: admirals, vice-admirals, and rear-admirals; the admiral carrying his color at the main, the vice-admiral at the fore, and the rear admiral at the mizzen

ADMIRAL—ADMIRALTY DROITS.

mast-head. In former times, each grade was subdivided into three sections, known as admirals (or vice or rear admirals) of the red, of the white, and of the blue, respectively. The flag hoisted by the admiral (thence called a flag-officer) agreed in color with his section; and all the ships under his command carried ensign and pendant of the same hue; but the distinction was otherwise without practical effect, and is now abolished. *Admiral of the Fleet* is a higher rank, conferred at the will of the sovereign. The rates of full or sea pay of flag-officers are as follows: Admiral of the fleet, per day, £6; admiral, £5; vice-admiral, £4; rear-admiral, £3. An admiral commanding-in-chief receives £3 a day additional at home, and £4 10s. abroad, as table-money. In 1885 there were 77 flag-officers in the British navy, viz., 6 admirals of the fleet, 15 admirals, 22 vice-admirals, and 34 rear-admirals. In the same year, the number of flag-officers retired and on reserve half-pay was upwards of 120. The admiral of the fleet takes rank with a field-marshal, admirals with generals, vice-admirals with lieutenant-generals, and rear-admirals with major-generals.

ADMIRAL: the highest rank in the American Navy; established by act of congress, 1862, July. This act provides for the existence, on the active list of the line officers of the Navy, of one admiral, one vice-admiral, and ten rear-admirals. The A. receives \$13,000; vice-A., when at sea, \$9,000; on shore duty, \$8,000; on leave, or waiting orders, \$6,000; rear-admirals, when at sea, \$6,000; on shore, \$5,000; on leave, or waiting orders, \$4,000. During peace, vacancies in the grade of rear-A. are filled by regular promotion from the list of commodores, subject to examination, according to law. During war, rear-A.'s must be selected from those officers on the active list not below the grade of commander, who shall have eminently distinguished themselves by courage, skill, and genius in their profession; but no officer can be so promoted unless, upon the recommendation of the president, he shall have received the thanks of congress for distinguished service.

ADMIRALTY COURT, in England: created to try and to decide maritime causes. Its functions are now exercised by the Probate, Divorce and Admiralty Division of the High Court of Justice, constituted in 1873-75. The appeal from the A.C., which was originally to the king in chancery, and afterwards to certain commissioners of appeals, consisting chiefly of the privy council, and not of judges delegated by that body, is now to the court of appeal created by the Judicature Act of 1873-75. Since the passing of the Criminal Law Consolidation Acts, the criminal jurisdiction of the A.C. may be regarded as obsolete.

ADMIRALTY DROITS, *droys*, in Great Britain: a portion of the hereditary revenues of the crown, arising from enemies' ships detained in the prospect of a declaration of war, or coming into port in ignorance of the commencement of hostilities, or from such ships as are taken by non-commissioned captors, the proceeds of wrecks, the goods of pirates, and the like. The proceeds of the Droits

ADMIRALTY ISLAND.

of A. are now paid into the exchequer for the public use.

ADMIRALTY ISLAND: on the n.w. coast of N. America, between $57^{\circ} 2'$ and $58^{\circ} 24'$ lat. n., and $134^{\circ} 52'$ and $135^{\circ} 30'$ long. w. It is about 80 m. long, well wooded and watered. It is inhabited, and belongs to the United States.

ADMIRALTY ISLANDS: a group of about 40 islands, to the n.e. of New Guinea, between 2° and 3° lat. s., and $146^{\circ} 18'$ and $147^{\circ} 46'$ long. e. They were discovered by the Dutch in 1616. The largest is about 50 m. long from e. to w. They abound in cocoanut trees, and are inhabited by a race of tawny, frizzle-headed savages.

ADMIRALTY JURISDICTION: a judicial cognizance of a certain class of cases arising under the constitution of the United States, by act of congress. The constitution has delegated to the courts of the national government cognizance 'of all cases of admiralty and maritime jurisdiction,' and congress has given to the U. S. district courts 'cognizance of all civil causes of admiralty and maritime jurisdiction, including all seizures under laws of imposts, navigation, or trade, of the United States, where the seizures are made on waters navigable from the sea, by vessels of ten or more tons burden, within their respective districts, as well as upon the high seas.' The district court has jurisdiction, as a court of admiralty, over all torts and injuries committed on the high seas, and in ports or harbors within the ebb and flow of the tide. It has jurisdiction to redress personal wrongs committed on a passenger, on the high seas, by the master of a vessel, whether these wrongs be by the exercise of direct force, or be consequential injuries. This court may decree damages for an unlawful capture of an American vessel, e.g. by a French privateer, and may proceed by attachment. It has jurisdiction in cases of maritime torts, personal or otherwise. It has jurisdiction of suits to reinstate owners of vessels who have been displaced from their possession. And, in the case of a father, whose minor son has been abducted and seduced on a voyage on the high seas, he may sue in this court, as well for the tort as for wages earned by such son in maritime service. This court has, also, as a court of admiralty, jurisdiction concurrent with the courts of common law over all maritime contracts, wheresoever the same may be made or executed, or whatsoever be the form of the contract. It may enforce the performance of charter-parties for foreign voyages, and a lien for freight under them. It has jurisdiction over contracts for the hire of seamen, when the service is substantially performed on the sea, or on waters within the flow and reflow of the tide, but unless the services be essentially maritime the jurisdiction does not attach. The master of a vessel may sue in the admiralty for his wages, and the mate, who on his death succeeds him, has the same right. Seamen employed on board of steamboats and lighters engaged in trade or commerce on tide-water are within the admiralty jurisdiction, but those on ferry boats are not so. Wages

ADMIRE—ADMONISH.

may be recovered in the admiralty by the pilot, deck-hands, engineer, and firemen on board of a steamboat. But unless the service of those employed contribute in navigating the vessel, or to its preservation, they cannot sue for their wages in the admiralty; musicians on board of a vessel, who are hired and employed as such, cannot, therefore, enforce a payment of their wages by a suit in the admiralty. The admiralty jurisdiction, expressly vested in the district court, embraces also captures made within the jurisdictional limits of the United States. The civil jurisdiction extends to cases of seizure on land, under the laws of the United States, and in suits for penalties and forfeiture incurred under the laws of the United States. The civil jurisdiction extends also to cases in which an alien sues for a tort, in violation of the law of nations, or a treaty of the United States. This court has also jurisdiction of actions by and against consuls and vice-consuls.

ADMIRE, v. *ăd-mîr'* [F. *admirer*—from L. *admirari*, to admire—from L. *ad*, *mîror*, I wonder: Sp. *admirar*—*lit.*, to regard with wonder or surprise]: to look upon with pleasure; to love or esteem greatly. **ADMIRING**, imp. **ADMIRER**, pp. *ăd-mîrd'*. **ADMIRABLE**, a. *ăd-mî-ră-bl'* [F.]: worthy of esteem or praise; of a quality to excite wonder or esteem. **ADMIRABLY**, ad. *ăd-mî-ră-blî*, in an admirable manner. **ADMIRINGLY**, ad. *ăd-mî-rîng-ă*, in a manner to excite wonder; with esteem; with admiration. **ADMIRABLENESS**, n. *ăd-mî-ră-bl-nēs*, and **ADMIRABILITY**, n. *ăd-mî-ră-blî-tî*, the quality of being admirable. **ADMIRATION**, n. *ăd-mî-ră-shiun* [F.—L.]: wonder mingled with pleasure or slight surprise. **ADMIRER**, n. *ăd-mî-rēr*, one who admires.—**SYN.** of 'admiration': surprise; wonder; astonishment; amazement.

ADMIT, v. *ăd-mît'* [L. *admittĕre*, to allow or suffer to go to; *admissus*, allowed or suffered to go to—from *ad*, to; *mitto*, I send; *missus*, sent: F. *admettre*: It. *ammettere*—*lit.*, to suffer to go to]: to permit to enter; to receive as true; to allow. **ADMITTING**, imp. **ADMITTED**, pp: **ADJ.** conceded, as in an argument; recognized. **ADMITTABLE**, a. *-bl*, capable of being admitted. **ADMITTER**, n. one who admittance, n. *ăd-mît-tîns*, permission to enter; power of entering. **ADMISSION**, n. *ăd-mîsh'ûn*, entrance; power or permission to enter. **ADMISSIBLE**, a. *ăd-mîs'si-bl*, that may be allowed or admitted. **ADMIS'SIBLY**, ad. *-blî*. **ADMIS-SIBILITY**, n. *-blî-tî*, the quality of being admissible.—**SYN.** of 'admit': to receive; allow; grant; permit; suffer; tolerate;—of 'admission and admittance': access; entrance; concession; initiation.

ADMIX, v. *ăd-mîks'* [L. *admixtus*, mingled in addition—from *ad*, *mixtus*, mingled]: to mingle with something else. **ADMIXING**, imp. **ADMIXED**, pp. *-mîkst'*. **ADMIXTURE**, n. *ăd-mîks'tūr*, a substance formed by mingling one substance with another; also **ADMIXTION**, n. *ăd-mîks'tiŭn*.

ADMONISH, v. *ăd-mön'îsh* [F. *admonester*—from L. *admonĕre*, to admonish—from *ad*, *monĕō*, I warn; *monitŭs*, warned: F. *admonissant*, admonishing—*lit.*, to bring to one's

ADNASCENT—ADONIS.

mind]: to warn; to reprove gently; to advise. **ADMON'ISHING**, imp. **ADMONISHED**, pp. *ăd-mŏn'isht*. **ADMON'ISHER**, n., or **ADMON'ITOR**, n. *tér*, one who admonishes. **ADMONITION**, n. *ăd-mŏ-nish'ŭn*, gentle reproof; caution. **ADMONITIVE**, a. *ăd-mŏn'î-tiv*, also **ADMONITORY**, a. *ăd-mŏn'î-tér-î*, that conveys caution or warning. **ADMON'ITIVELY**, ad. *-tív-lî*.—**SYN.** of 'admonish': to advise; caution; warn; reprove; reprimand;—of 'admonition': reproof; warning; caution; reprehension.

ADNASCENT, a. *ăd-năs'ěnt* [L. *ad, nascens* or *adnāscen'tem*, growing]: growing to or upon; also **ADNATE**, a. *ăd-nāt'* [L. *ad, nātus*, born]: grown to; in *bot.*, fused together, or adherent, side by side. **ADNATION**, n. *ăd-nā-shŭn*, in *bot.*, the adhesion or consolidation of the different floral verticils with one another.

ADNEXED, a. *ăd-někst'* [L. *ad, nexus*, bound or tied]: in *bot.*, reaching to the stem only, as in the gills of Agarics.

ADO, n. *ă-dŏ'* [corruption of OE. phrase *at do*, to do: AS. *a*, at or on, and *do*: *at* is the sign of infinitive in Icel.]: fuss; trouble; bustle; difficulty.

ADOBE, n. *ă-dŏ'bā* [Sp. *adobe*—from *adobar*, to dress, to prepare]: a mixture of chopped straw, earth, and dung, made into bricks and dried in the sun only.

ADOLESCENCE, n. *ăd'ŏ-lēs'ěns*, **ADOLESCENCY**, n. *ăd'ŏ-lēs'ěn-sî* [L. *adŏles'cens* or *adŏlēs'cen'tem*, increasing or growing]: a growing state; youth up to manhood. **ADOLESCENT**, a. *ăd'ŏ-lēs'ěnt*, growing; pertaining to youth.

ADONIC, a. *ă-dŏn'îk* [from *Adŏnis*—in *anc. myth.* a youth, the favorite of Venus, the goddess of love]: pertaining to a certain kind of verse: N. a poetical verse consisting of a dactyl, and a spondee or trochee.

ADONIS, *ă-dŏ'nîs*: a mythical personage, whose beauty as a child so attracted the love of Venus and Proserpine, that they quarrelled about the possession of him. Jupiter, appealed to, settled the dispute by deciding that A. should spend part of the year with Venus, and part with Proserpine, so that he lived eight months of the year in the upper



Adonis.

world, and four in the under. A. was afterwards killed by a boar while hunting, and Venus, coming too late to his rescue, changed his blood into flowers.—A yearly festival was celebrated in honor of A., and consisted of two parts—a mourning for his departure to the under world. and a

ADONIS—ADOPTIAN CONTROVERSY.

rejoicing for his return to Venus. This festival, widely spread among the countries bordering on the Mediterranean, was celebrated with peculiar pomp at Alexandria. Connected therewith were the Gardens of A., as they were called. Before the festival, wheat, fennel, and lettuce were sown in earthen, and even in silver pots, and forced by heat; intended to indicate, doubtless, by their brief bloom, the transitoriness of earthly joy. The myths connected with A. belong originally to the east. They display a worship of the powers of nature conjoined with that of the heavenly bodies, and A. himself appears to be the god of the solar year. The similarity of the name to the Phœnician *Adon*, which signified 'lord,' is unmistakable; and this word *Adon* was specially applied to the king of heaven, the sun.—In reference to the brilliant beauty ascribed to A., a beautiful man is called 'an Adonis.'

ADONIS: a genus of plants of the natural order *Ranunculaceæ* (q.v.), in which the flower has 5 sepals and 5-10 petals without scales at the base, and the fruit consists of awnless pericarps. The species are all herbaceous—some of them annual and some perennial. Several are natives of Europe, but only one, *A. autumnalis*, sometimes called Pheasant's Eye, is a doubtful native of Britain. Its bright scarlet petals have obtained for it the name of *Flos Adonis*, their color having been fancifully ascribed to their being stained with the blood of Adonis. It is a well-known ornament of gardens; in which also *A. æstivalis* frequently appears, and *A. vernalis*, a perennial species common upon the lower hills of the middle and south of Germany, with early and beautiful flowers.



Adonis autumnalis.

ADOPT, v. *ä-döpt'* [F. *adopter*—from L. *adoptāre*, to adopt—from *ad*, *opto*, I wish, I choose: Sp. *adoptar*]: to choose for one's self; to take or receive as one's own what is not naturally so—as a person, a thing, an opinion; to choose. **ADOPT'ING**, imp. **ADOPT'ED**, pp.: **ADJ.** taken up as one's own. **ADOPTION**, n. *ä-döp'shün* [F.—L.]: state of being adopted; the taking as one's own that which is not so naturally. **ADOPT'IVE**, a. *-iv*, that adopts. **ADOPT'ER**, n. one who. **ADOPT'EDLY**, ad. *-ly*.

ADOPTIAN CONTROVERSY, *ä-döp'shī-än-*, **THE**: an echo of the Arian controversy; originated about the end of the 8th c. in Spain, the country in which the doctrine of Arius had longest held out against the theology of the general church. Elipandus, Archbishop of Toledo, and Felix, the learned Bishop of Urgel, advanced the opinion that Christ, in respect of his divine nature, was doubtless by nature and generation the Son of God; but that as to his human nature, he must be considered as only declared and

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adopted, through the divine grace, to be the first-born Son of God (Rom. viii. 29), as all holy men, although in a less lofty sense, are to be adopted as sons of God. The flame of controversy thus kindled, spread into the Frankish empire, the special domain of 'Catholic' Christianity, and gave occasion to two synods, one held at Ratisbon, 792, and another at Frankfort, 794, in which Charlemagne took part in person, and which condemned Adoptianism as heresy. The Catholic doctrine of the unity of the two natures of Christ in one divine person, and the consequent impossibility of there being a twofold Son—an original and an adopted—was upheld by Alcuin and the other learned men of Charlemagne's court. At a subsequent synod at Aix-la-Chapelle, Felix, yielding to compulsion, recanted his opinions, without, as it seems, being convinced. Elipandus adhered fanatically to his views, which were, in after times, defended by Folmar, 1160, Duns Scotus (d. 1308), Durandus (d. 1322), the Jesuit Vasquez, 1606, and the Protestant divine Calixtus, 1643.

ADOPTION: a legal institution of much importance in both of the classical nations of antiquity. A., in the stricter sense, in the Roman law, applied only to the case in which a person in the power of his father or grandfather was transferred to that of the person adopting him. Where the person adopted was already emancipated from the paternal power (*patria potestas*), and was regarded by the law as his own master (*sui juris*), the proceeding was called adrogation (*adrogatio*). A., however, was also used as a generic term comprehending the two species; and in Greece, where there was nothing corresponding to the paternal power of the Romans, this distinction did not obtain. Adoption was effected under the authority of a magistrate, the prætor at Rome, or the governor (*præses*) in the provinces. Adrogation originally required a vote of the people in the *Comitia Curiata*; but under the emperors, it became the practice to effect it by an imperial rescript. A. was unknown to the law of the Teutonic nations; and though most of the states of the continent have borrowed it from the Roman law, it has never existed as an institution either in England or Scotland. The patrimonial benefits of A. may, however, be conferred by deed; and there is no illegality in any one assuming the name, arms, and other distinguishing characteristics, and corresponding responsibilities, of a person who does not belong to his family. In France, A. is recognized only in a very modified form (*Code Civil*, art. 343, *et seq.*).

ADORE, v. *ă-dor'* [F. *adorer*, to adore: L. *adorārē*, to worship—from L. *ad*, *oro*, I pray to, I entreat—from *os* or *ōrem*, the mouth: Sp. *adorar*: It. *adorare*]; to speak to or address in worship; to pay divine honor to; to worship solemnly; to regard with esteem; to love highly. **ADOR'ING**, imp. **ADORED'**, pp. *ă-dord'*. **ADOR'ER**, n. one who. **ADOR-ABLE**, a. *ă-dor'ă-bl*, worthy of worship; that ought to be loved or respected. **ADOR'ABLY**, ad. *-blī*. **ADOR'ABLENESS**, n. *-bl-nēs*, the quality of being adorable. **ADORINGLY**, ad. *ă-dor'ing-lī*. **ADORATION**, n. *ăd'ō-ră'shūn*, the worship of

ADORN—ADRA.

God; the act of praying.—**SYN.** of 'adore': to worship; reverence; revere; venerate.

ADORN, v. *ă-dawrn'* [F. *adorner*; Sp. *adornar*, to beautify, to adorn—from L. *adornārē*, to adorn—from L. *ad, orno*, I deck or beautify: It. *adornare*]: to deck with ornaments; to deck; to make beautiful. **ADORNMENT**, n. *ă-dawrn'měnt*, an adorning; ornament. **ADORN'ING**, imp. **ADORNED**, pp. *ă-dawrnd'*. **ADOR'NER**, n. *-ner*, one who. **ADORN'INGLY**, ad. *-lī*.—**SYN.** of 'adorn': to decorate; embellish; ornament; deck; grace; beautify; garnish; exalt; honor; dignify.

ADOSCULATION, n. *ăd-ôs'kû-lă'shûn* [L. *ad, osculātus*, kissed—from *osculum*, a little mouth, a kiss—from *os*, a mouth]: in *bot.*, the impregnation of plants; a propagation of plants by inserting one part of a plant into another.

ADOUR, *ăd-ôr'*, a river in France: rises near Tourmalet, in the department of the Upper Pyrenees, waters in its course of 200 m. the department Gers, and the fertile part of the department Landes, and enters the Atlantic below Bayonne. It receives several tributaries, and is navigable to the extent of 80 m. Bagnères-de-Bigorre, celebrated for its hot baths, is situated on the A.

ADOWA, *ăd-dô-wă*: a town of Abyssinia, the capital of Tigré, 145 m. n.e. from Gondar. It is situated partly on the slope, and partly at the base of a hill, on the left bank of the Hasam, a feeder of the Atbara, which is a large branch of the Nile. The houses are of the conical form common in Abyssinia, regularly disposed in streets, and mingled with gardens and trees. A. is the chief entrepôt of trade between the interior of Tigré and the coast. It has an extensive transit trade, in which, gold, ivory, and slaves are articles of importance. It has also manufactures of cotton fabrics, and iron and brass wares. Pop. estimated at about 8,000.

ADOWN, prep. and ad. *ă-down* [AS. *adûne*—from *a*, for; *of*, off or from; *dûn*, a hill]: downward; from a higher to a lower situation.

ADRESSED, a. *ăd-prěst'* [L. *ad, to; pressus*, pressed; squeezed]: in *bot.*, closely pressed to a surface, as some hairs; or as leaves to a stem; pressed close to anything; also spelt **APPRESSED**.

ADRA, *ăd-dră*, (ancient *Abdera*), a seaport town of Spain, in the province of Granada, and 49 m. s.e. from Granada. It is situated on the shore of the Mediterranean, at the mouth of the Adra. The ancient Abdera, founded by the Phœnicians, was on a hill, at the base of which the modern town stands, in a situation unhealthy on account of swamps. The port is not good, being much exposed to the west. The houses are generally of one story. There is one tolerably wide street, the rest are narrow and ill paved. From the watch tower of A., in former times, a tocsin sounded the alarm on the approach of African pirates. Lead mines in the neighborhood give employment to many of the inhabitants, and trade to the port. Among the other exports are

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grapes, wheat, and sugar. Fishing and the distillation of brandy are carried on. Pop. (1877), 11,320.

ADRENAL, a. *ăd-rē'năl* [L. *ad, rēnēs*, the kidneys]: connected with the kidneys.

ADRIA, *ă'drē-ă*: city in the province of Rovigo, n. Italy, between the river Po and the Adigé: remarkable chiefly as one of the oldest cities in Europe. According to tradition, it was founded by the Pelasgi, B.C. 1376. In the time of the Romans, A. was one of the most frequented harbors in the Adriatic Sea; but by the continual deposition of alluvium on the e. coast of Italy, it has been gradually separated from the sea, from which it is now almost ten m. distant. It still retains several interesting remains of Etruscan and Roman antiquity; but its wine, formerly so celebrated, is now bad. Pop. (1881), 7,642.

ADRIAN, *ă'drī-an*: name of six popes, none of them very remarkable. A. IV. was by birth an Englishman, the only one of that nation that ever sat in the papal chair. His name was Nicolas Breakspeare. He was a native of Langley, near St. Albans, became first a lay-brother or servant in the monastery of St. Rufus, near Avignon, and, 1137, was elected abbot. His zeal for strict discipline raised a combination to defame his character, and he had to appear before Eugenius III. at Rome. Here he not only cleared himself of all charges, but acquired the esteem of the pope, who appointed him cardinal-bishop of Albano, 1146. On the death of Anastasius, 1154, he was raised to the papal see. A. was at first on friendly terms with the Emperor Frederic I.; but his high notions of the papal supremacy, which he carried as far as even Gregory VII., led to the beginning of that long contest of the popes against the house of Hohenstaufen, which ended in the destruction of the dynasty. He was about to excommunicate Frederic, when he died at Anagni, 1159. It was in A.'s time that the doctrine of transubstantiation (q.v.), advanced by Petrus Lombardus, was established.

ADRIANOPE, *ăd-rī-ăn-ō'pl*, second city in the Turkish empire: founded by the emperor Hadrian on the left bank of the navigable river Hebrus (now Maritza). Here the sultans ruled, 1366 to 1453, when Constantinople was made the capital. Two palaces, 40 mosques, 24 public schools, 22 baths, and the numerous gardens laid out on the banks of the Maritza, are the principal features of A. Its trade consists in opium, oil of roses, with silk and other manufactures. —The Russian-Turkish war was here concluded 1829, Sept. 19, by the Peace of A., which left the Porte in possession of Wallachia, Moldavia, and the conquests made by Russia in Bulgaria and Roumelia. On the other side, Russia got possession of the whole of the coast of the Black Sea, from the mouth of the Kuban, lat. 45° 15', to the haven of St. Nicholas, lat. 42°, with the territories of the Caucasus, and the greater part of the pachalic of Akalzik. After the capture of the Turkish army defending the Shipka Pass, Jan., 1878, the Russians entered A. unopposed by the Turks. Pop. over 65,000, of whom more than 22,000 are Turks.

ADRIATIC SEA—ADULÉ.

ADRIATIC SEA, *ăd'rē-ăt'ik*: a large arm of the Mediterranean, extending in a n.w. direction, between the e. coast of Italy and the w. coast of the opposite continent; connected with the Ionian Sea by the strait of Otranto. In the n., it forms the Gulf of Venice, and in the n.e. the Gulf of Trieste; while, on the Italian side, it forms the bays of Ravenna and Tremiti, and the narrower and deeper Gulf of Manfredonia. On the other side, the coasts of Illyria, Croatia, Dalmatia and Albania are steep, rocky, and barren, and begirt with a chain of almost innumerable small rocky islands. The chief bay in this side is that of Quarnero, s. of the peninsula of Istria. The most considerable rivers flowing into the A. S. are the Adigé and the Po, which are continually depositing soil on the coast, so that places once on the shore are now inland. The extreme saltness of the A. is probably owing to the comparatively small quantity of fresh water poured into it by rivers. Navigation in the A. is safe and pleasant in summer, but in winter the n.w. gales are formidable, on account of the rocky and dangerous coasts on the east. Trieste, Ancona, and Sinigaglia are the chief places of commerce.

ADRIFT, ad. *ă-drift'* [AS. *a*, on, and *drift*; *adrifan*, to drive away, to expel]: floating about at random; driven.

ADROIT, a. *ă-droyt'* [F. *adroit*, to the right, dexterous—from *à*, to; *droit*, right—from mid L. *directum*, right, justice]: clever in the use of the hands; ready-witted; dexterous. **ADROIT'LY**, ad. *-lī*, in a ready, skilful manner. **ADROIT'NESS**, n. readiness; dexterity.—**SYN.** of 'adroit': clever; skilful; expert; dexterous; ingenious; ready.

ADRY, a. *ă-dri'* [AS. *a*, *drig*, dry]: in *OE.*, thirsty; athirst; in want of drink.

ADSCITITIOUS, a. *ăd'si-tish'ūs'* [L. *adscītus*, received as true—from *ad*, *sciō*, I know]: added; assumed; taken as supplemental. **ADSCITITIOUSLY**, ad. *-lī*.

ADSCRIPT, n. *ăd'skript* [L. *adscriptus*, assigned to in a writing—from *ad*, *scriptus*, written]: in *OE.*, one bound in service to a thing or place, without power of removal, as a slave or serf to the soil.

ADSTRICTION, n. *ăd-strīk'shūn* [L. *adstrictus*, bound or fastened to something—from *ad*, *strictus*, drawn together]: a binding fast; constipation.

ADULARIA, n. *ăd'ū-lā-rī-ă* [Gr. *adulāros*, sweetly fair—from (*h*)*edus*, sweet; *laros*, pleasant: or *Adula*, one of the highest peaks of St. Gotthard, in Switzerland, where found]: a transparent variety of potash felspar.

ADULATION, n. *ăd'ū-lā'shūn* [F. *adulation*, flattery—from L. *adulātīonem*, fawning like a dog—from *adulārē*, to fawn upon, to flatter]: servile flattery; praise in excess.

ADULATOR, n. *ăd'ū-la-tēr*, one who. **ADULATORY**, a. *ăd'ū-lā-tēr'ī*, containing excessive praise.—**SYN.** of 'adulation': flattery; praise; compliment; obsequiousness;—of 'adulator': flatterer; sycophant; parasite; courtier.

ADULÉ, *ă-dō'léh*: ancient town on the Red Sea. It was the port of Axum, and is noticed chiefly on account of an

ADULLAMITES—ADULTERY.

inscription, of some importance relative to the ancient geography of those regions, the *Monumentum Adulitanum*, first published in the 6th c., in the *Topographia Christiana* of Cosmos Indicopleustes. The modern town is called Zulla.

ADULLAMITES, *ă-dŭl'ăm-īts*. An attempt, in the year 1866, by the government of Earl Russell and Mr. Gladstone, to carry a measure which would have brought about a sweeping reduction of the elective franchise, gave occasion to a large number of the more moderate Liberals to secede from the Whig leaders and vote with the Conservatives. The designation of *Adullamites* was fastened on the new party, in consequence of Mr. Bright having, in the course of debate, likened them to the political outlaws who took refuge with David in the cave of Adullam (1 Samuel, xxii. 1, 2); a comparison taken up by Lord Elcho, who humorously replied that the band congregated in the cave was hourly increasing and would succeed in delivering the house from the tyranny of Saul (Mr. Gladstone) and his armor-bearer (Mr. Bright).

ADULT, n. *ă-dŭlt'* [L. *adultus*, grown: F. *adulte*, full-grown]: an individual of either sex supposed to be full-grown, as from fifteen years of age upwards; that which is grown to maturity: **ADJ.** mature; grown up. **ADULT'NESS**, n. state of being an adult.

ADULTERATE, v. *ă-dŭl'tér-ăt* [L. *adulterātus*, corrupted; *adulter*, an adulterer, a paramour]: to corrupt; to make impure by a base mixture. **ADULTERA'TING**, imp. **ADULTERA'TED**, pp: **ADJ.** rendered impure or corrupt by a base admixture. **ADULTERATION**, n. *ă-dŭl'tér-ă'shŭn*, the being corrupted or debased; the act of debasing by a foreign admixture; an article not pure and genuine. **ADULTERA'TOR**, n. *-tér*, one who; also **ADULTERANT**, n. **ADULTERATELY**, ad. *-lŭ*. **ADULTERATE'NESS**, n. the quality or condition of being debased or corrupted. **ADULTERER**, n. *ă-dŭl'tér-ér*, a man guilty of adultery; in *Scrip.* an idolater. **ADULTERESS**, n. a woman guilty of adultery. **ADULTEROUS**, a. *ă-dŭl'tér-ŭs*, pertaining to adultery; unclean. **ADULTEROUSLY**, ad. *-lŭ*. **ADULTERY**, n. *ă-dŭl'tér-ŭ*, violation of the marriage-bed; in *Scrip.*, idolatry. **ADULTERINE**, a. *ă-dŭl'tér-în*, resulting from adultery; spurious: **N.** a child born from adulterous intercourse.—**SYN.** of 'adulterate': to debase; defile; vitiate; sophisticate; corrupt; contaminate;—of 'adulterated': counterfeit; spurious; supposititious; fictitious; sophisticated, etc.

ADULTERATION OF FOOD: see under the various articles of food: also **FOOD**.

ADULTERY: has been well defined as 'the voluntary sexual intercourse of a married person with a person other than the offender's husband or wife.' (*Bishop on Marriage and Divorce*, § 415.) By the Roman law there was no A. unless the woman was married, and the same was the rule in Athens. It was in this limited form also that A. was recognized by the Mosaic law. By the canon law the husband and wife were placed on the same footing; and this view has been adopted by all the nations of modern Europe.

ADULTERY.

In New Jersey it has been decided that a married man does not commit this crime in having connection with an unmarried woman. (Bishop, *ibid.*) But this has not been the prevalent doctrine even in America; and it has never been doubted that the offense necessary to found the sentence of divorce is committed by unlawful sexual intercourse equally whether the *particeps criminis* were married or single. A. was recognized as a crime even before Moses (Gen. xxxviii. 24), and it is probable that in affixing to it the punishment of death (Lev. xx. 10), he followed the prevailing custom. A very remarkable law was introduced for the trial of A., by causing the woman suspected to drink the bitter waters of jealousy (Numb. v. 26). In Rome, the Julian law, enacted in the time of Augustus (17 B.C.), revised the previous legislation on the subject, and imposed special penalties, consisting of forfeiture of goods and banishment, both on the adulteress and the paramour. The husband, in certain cases, was permitted to kill the latter, and the father might sometimes kill both. A constitution of Constantine, the authenticity of which has been doubted, made A. a capital offense on the man's part. Whatever Constantine's law was, it was confirmed by Justinian, who further condemned the wife to be whipped and imprisoned in a convent for the rest of her days, unless relieved by her husband within two years (*Novel*, 134 c. 10). The offense was visited in Athens with punishments closely resembling those of the earlier Roman legislation. In many continental countries, A. is still treated as a criminal offense, but in none of them does the punishment now exceed imprisonment for a limited period, which is frequently accompanied with a fine. Lord Coke says, that by the law of England in early times, A. was punished by fine and imprisonment (3 *Inst.* 306). During the Commonwealth, it was made a capital offense (*Scobell's Acts*, part ii., p. 121); but this law was not confirmed at the Restoration. In Scotland, the records of the court of justiciary show that capital punishment was frequently inflicted. At the present day it is punishable in Great Britain only by ecclesiastical censure; and even this may be regarded as in desuetude. But when committed by the wife, it was regarded as a civil injury, and, till the passing of the stat. 20 and 21, Vic. c. 85 and 59, formed the ground of an action of damages for criminal conversation (commonly known as an action of *crim. con.*) by the husband against the paramour. No corresponding action was competent to the wife, either in England or America; and her only remedy consisted in obtaining a separation or divorce. In Scotland, A. forms a ground for dissolution of the marriage, at the suit of the injured party. See SEPARATION, DIVORCE.

ADULTERY, in Criminal Law: criminal connection between a married man and a woman not his wife, whether the woman be married also, or single; and similarly between a married woman and a man not her husband. In this crime, however, it is only the married person who is guilty of A. The essentials to the offense are: (1) That there shall be unlawful carnal connection; (2) that the guilty party shall at

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the time be married; (3) that he or she shall willingly commit the offense. A. in one of a married pair is held to be good cause for obtaining divorce by the innocent partner, and this, in the state of New York, affords the only legal grounds for such divorce. The punishment for A. differs in the different states, but is usually by fine or imprisonment, either or both.

ADUMBRATE, v. *ăd-ŭm'brăt* [L. *adūmbratus*, shadowed forth, delineated—from *ad*, *umbra*, a shadow]: to cast a faint shadow; to sketch faintly. **ADUM'BRATING**, imp. **ADUM'BRATED**, pp. **ADUM'BRANT**, a. casting a faint shadow. **ADUMBRATION**, n. *ăd'ŭm-bră'shŭn*, the act of casting a shadow; the act of giving a faint and imperfect resemblance; in *her.*, a figure on a coat of arms traced in outline only, or painted in a darker shade, as the field or background.

ADUNCATE, a. *ă-dŭng'kăt*, also **ADUNCOUS**, a. *ă-dŭng'kŭs* [mid. L. *aduncātus*—from L. *aduncus*, hooked—from *ad*, *uncus*, a hook]: in *bot.*, crooked; bent in the form of a hook. **ADUNCITY**, n. *ă-dŭn'si-ti*, crookedness like a hook; a hooked form.

ADUST, a. *ă-dŭst'* [L. *adus'tus*, burnt up, scorched—from *ad*, *ūrō*, I burn]: scorched; very dry, as if by heat; fiery. **ADUSTED**, a. *ă-dŭst'ĕd*, scorched; dried, as by heat. **ADUSTION**, n. *ă-dŭst'yŭn*, the act of scorching or drying; the state of being scorched or dried.

ADVANCE, v. *ăd-văns'* [F. *avancer*; Sp. *avanzar*, to advance: F. *avant*; mid. L. *abante*, before, forward]: to put forward or before; to move or bring forward; to raise to a higher rank; to propose; to pay beforehand; to be promoted; to make improvement: N. a moving or bringing forward; promotion; a rise in value or price; a giving beforehand; a proposal. **ADVAN'ING**, imp. **ADVANCED**, pp. *ăd-vănst'*. **ADVAN'ER**, n. *-sēr*, one who puts forward. **ADVANCE'MENT**, n. the act of moving or being moved forward; a step or rise in rank or promotion. **ADVANCIVE**, a. *ăd-văn'siv*, tending to advance. **IN ADVANCE**, before; in front; beforehand. **ADVANCED-GUARD**, n. in *mil.*, the detachment of troops which precedes the main body of an army or division. **ADVANCED POSTS**, small bodies of troops placed in front to watch and guard, as against surprises, or the approaches to the camp. **ADVANCED WORKS**, those formed beyond the glacis of a fortification, and under the protection of its guns.—**SYN.** of 'advance, v.': to proceed; forward; promote; allege; adduce; assign; exalt; elevate; raise; enhance; accelerate; aggrandize; heighten;—of 'advancement': promotion; preferment; progression; improvement, etc.

ADVANTAGE, n. *ăd-văn'tăj* [OF. and F. *avantage*, profit—from F. *avant*; It. *avanti*; mid. L. *abante*, before, forward—*lit.*, something that puts one forward]: superiority in any state, condition, or circumstance; gain; interest. **ADVANTAGED**, pp. *ăd-văn'tăjd*, benefited; forwarded. **ADVANTAGEOUS**, a. *ăd-văn-tă'jŭs*, favorable; full of benefit. **AD'VANTA'GEOUSLY**, ad. *-lī*, conveniently; profitably. **AD'**

ADVENT.

VANTA'GEOUNESS, *n.* *jūs-nēs*, the quality or condition of being of advantage; profitableness. *Note.*—The insertion of a *d* in *advance* and *advantage* is modern; in *OE.*, we have *avance* and *avantage*.—**SYN.** of 'advantage': benefit; profit; gain; interest;—of 'advantageous': profitable; beneficial; opportune; convenient; useful.

ADVENT, *n.* *ād'vent* [*L. adven'tus*, arrived, reached—from, *ad, venio*, I come: *OF. advent*—*lit.*, a coming to a person or thing]: the coming of Christ to the earth; in the Roman Cath., and in the Epis. and some other Prot. churches, the four weeks before Christmas; arrival, as the *advent* of the empire. **AD'VENT**, *a.*, also **ADVENTUAL**, *a.* *ād'ven'tū-āl*, relating to the season of advent.

ADVENT, or Time of Advent: a term applied, by the Christian Church, to certain weeks before Christmas. In the Greek Church, the time of A. comprises forty days; but in the Roman Church, and those Protestant churches in which A. is observed, only four weeks. The origin of this festival, as a church ordinance, is not clear. The first notice of A., as an appointment of the church, is found in the Synod of Lerida, A.D. 524, at which marriages were interdicted from the beginning of A. until Christmas. The four Sundays of A., as observed in the Roman Church and the Church of England, were probably introduced into the calendar by Gregory the Great. It was common from an early period to speak of the coming of Christ as *fourfold*: his 'first-coming in the flesh'; his coming at the hour of death to receive his faithful followers (according to the expressions used by the apostle John); his coming at the fall of Jerusalem (Matt. xxiv. 30); and at the day of judgment. According to this fourfold view of A., the 'gospels' were chosen for the four Sundays, as was settled in the Western Church by the *Homiliarium* of Charlemagne. The observance of A. is intended to accord in spirit with the object celebrated. As mankind were once called upon to prepare themselves for the personal coming of Christ, so, according to the idea that the church year should represent the life of the founder of the church, Christians are exhorted, during this festival, to look for a spiritual advent of Christ. The time of the year when the shortening days are hastening towards the solstice—which almost coincides with the festival of the Nativity—is thought to harmonize with the strain of sentiment proper during A. In opposition, possibly, to heathen festivals, observed by ancient Romans and Germans, which took place at the same season, the church ordained that the four weeks of A. should be kept as a time of penitence; according to the words of Christ: 'Repent, for the kingdom of heaven is at hand.' During these weeks, therefore, public amusements, marriage-festivities, and dancing were prohibited; fasts were appointed, and sombre garments were used in religious ceremonies. The Protestant Church in Germany has also abstained from public recreations and celebrations of marriage during A. It was perhaps a natural thought to begin the church year with the days of preparation for the

ADVENTISTS—ADVERB.

coming of Christ. This was first done by the Nestorian Church in the East in the 6th c.; the example was soon followed in Gaul, and afterward became general throughout the west.

ADVENTISTS, SEVENTH DAY: see **SEVENTH DAY ADVENTISTS.**

ADVENTITIOUS, a. *ăd'vên-tîsh'ûs* [L. *adventitiûs*, coming from abroad, foreign—from *adven'tus*, a coming to, an arrival—from *ad, veniô*, I come]: come to accidentally; not forming an essential part; in *bot.*, applied to organs produced in abnormal positions, as in roots arising from aerial stems; unnatural, accidental, or acquired. **ADVENTITIOUSLY**, ad. accidentally. **ADVENTITIOUSNESS**, n. the state or condition of being accidental, or not forming an essential part.

ADVENTURE, n. *ăd'vên'tûr* [mid. L. *advënturâ*, that which happens by chance: OF. *aventure*; F. *aventure*, an adventure—from L. *ad, ventus*, come—*lit.*, anything which happens by accident]: a bold undertaking; a chance enterprise; a striking event: V. to risk on chance; to attempt or dare; to hazard. **ADVENTURING**, imp. **ADVENTURED**, pp. *-tûrd*. **ADVENTURER**, n. *ăd'vên'tû-rêr*, one who risks a thing on chance; a bold unprincipled schemer. **ADVENTUROUS**, a. *ăd'vên'tû-rûs*, bold; hazardous. **ADVENTURESOME**, a. *ăd'vên'tûr-sûm*, somewhat bold; daring; inclined to risk. **ADVENTUROUSLY**, ad. *-lî*, boldly; daringly. **ADVENTUROUSNESS**, n. the state or condition of being adventurous. **SYN.** of 'adventure, n.': chance; hazard; accident; event; occurrence; contingency; incident;—of 'adventurous': enterprising; daring; courageous; foolhardy; rash; hazardous.

ADVERB, n. *ăd'verb* [F. *adverbe*—from L. *advërbium*—from *ad, verbum*, a word—*lit.*, that which pertains to a verb]: in *gram*, a word used to modify the meaning of a verb, an adjective, an adverb, a clause, or a sentence. **ADVERBIAL**, a. *ăd'verb'i-ăl*, pertaining to an adverb. **ADVERBially**, ad. *-lî*, used as an adverb.

ADVERB: a part of speech joined to a verb, to an adjective, or another adverb, as an adjective, for analogous purposes, to a noun. From the frequency with which adverbs are joined to verbs they get their name. An A. cannot be the subject, the copula, or the predicate of a proposition; and is, therefore, a secondary part of speech, logically speaking. According to their signification, adverbs may be divided into—1. Adverbs of Place, as *where, towards*; 2. of Time, as *ever, immediately*; 3. of Degree, as *very, almost*; 4. of Manner, as *thus, wisely*; 5. of Belief or Doubt as, *perhaps, no*, etc. It is commonly said that 'some adverbs admit of comparison,' as if in this respect they differed from adjectives. The truth is, that adverbs admit of comparison under the same limitations, neither more nor less, that restrict the comparison of adjectives. Thus, *soon* is compared as naturally as *hard*. If *now* or *thus* cannot be compared, neither can *wooden* nor *circular*; and in both cases for the same reason—the sense forbids it. The laws of euphony prevent alike *miserable* and *miserably* from being compared

ADVERSE—ADVERTISEMENT.

grammatically, i.e., by the addition of *er* and *est*, but both admit of logical comparison by the use of *more* and *most*.—A large class of adverbs in English are formed from adjectives by annexing the syllable *ly*, whose meaning is that of the word *like*. Most languages have some such means of distinguishing the A. from the adjective, except the German, in which they are alike. Adverbs in general may be looked upon as abbreviations of phrases; thus, *here* = *in this place*, *then* = *at that time*, *wisely* = *like a wise man*. Combinations of words that can thus be represented by a single adverb, and all combinations that are analogous, though they may have no single word equivalent to them, are called adverbial expressions.

ADVERSE, a. *ād'vĕrs* [L. *adversum*, opposite to—from *ad*, to or against; *versus*, turned; F. *averse* and *adverse*, adverse]: opposed to; acting in contrary directions; contrary to; unfortunate; calamitous; in *bot.*, opposite. **AD'VERSELY**, ad. *-lī*, in an adverse manner; unfortunately. **AD'VERSENESS**, n. state or quality of being adverse; opposition. **ADVERSITY**, n. *ād-vĕr'si-tī*, ill fortune; continued calamity. **ADVERSARY**, n. *ād-vĕr-sĕr'ī*, one opposed to; an enemy. **ADVERSATIVE**, a. *ād-vĕr'si-tīv*, marking a difference or opposition.—**SYN.** of 'adverse': contrary; opposite; inimical; hostile; repugnant; averse; unwilling; reluctant;—of 'adversary': enemy; antagonist; opponent; foe;—of 'adversity': distress; calamity; misfortune; misery; affliction.

ADVERT, v. *ād-vĕrt* [L. *advertĕrĕ*, to direct the mind to; *adver'tens* or *adverten'tem*, directing the mind to—from *ad*, *ver'to*, I turn]: to turn the attention to; to refer to; to attend to; to consider. **ADVERT'ENT**, a. attentive; heedful. **ADVERT'ING**, imp. **ADVERT'ED**, pp. **ADVERTENTLY**, ad. *-lī*. **ADVERTENCE**, n. *ād-vĕr'tĕns*, also **ADVERTENCY**, n. *-tĕnsī*, attention or regard to; regard.—**SYN.** of 'advert': to regard; attend; allude; refer.

ADVERTISE, v. *ād-vĕr-tīz* [F. *avertir*, for *advertir*, to inform—from L. *ad*, *vertĕrĕ*, to turn—*lit.*, to turn the attention to]: to give notice; to inform; to insert a notice in a newspaper. **ADVERTIS'ING**, imp: **ADJ.** giving advice, inserting notices in a newspaper. **ADVERTISED**, pp. *-tīz'd*. **ADVERTISEMENT**, n. *ād-vĕr'tīz-mĕnt* [mid. L. *advertissamĕntum*; OF. *advertissement*; F. *avertissement*, an advertisement]: intimation; advice; intelligence; a notice in a newspaper. **ADVERTISER**, n. *ād-vĕr-tī'zĕr*; one who advertises; common name of a newspaper.—**SYN.** of 'advertise': to publish; announce; promulgate; proclaim; inform; apprise.

ADVERTISEMENT: the public notification of a fact. This is now effected by means of the ordinary newspapers, covers and fly leaves of magazines, or of newspapers and publications specially devoted to the purpose. Advertisements, both printed and written, are still posted on church-doors and other places of public resort, in which case they are commonly called bills or placards. Public notifications are frequently enjoined by statute. In many ways their legal effects are important. Advertisements by public car-

ADVICE.

riers, railway companies and the like, are equivalent to offers whereby the advertiser will be bound to those who send goods on the faith, and in accordance with the terms of the A. By advertising a *general ship* for a particular voyage, the master places himself on the footing of a public carrier, and is bound to receive goods for the port to which the vessel is advertised to sail. A merchant in such circumstances can insist on his goods being received, unless the ship be full or the entire freight engaged. The contract of affreightment is completed by the A. and the shipping of the goods in conformity and with reference thereto. See **CHARTER-PARTY, CARRIER**. Advertisements are found in **ENGLAND** as early as the middle of the 17th c., but advertising was not general till the beginning of the 18th. Most newspapers are rendered remunerative to their proprietors chiefly by means of the advertisements which they contain. The business of newspaper advertising in the U. S. was estimated, in 1880, to return a sum aggregating \$39,136,306, divided in the proportion of fifty-five per cent to the daily newspapers and forty-five to the weeklies, etc. The states whose newspapers received the largest sums for advertising were in the following order: New York, \$8,674,173; Pennsylvania, \$4,218,770; Illinois, \$3,179,954; Massachusetts, \$2,512,522; Ohio, \$2,460,642; California, \$2,150,917; Missouri, \$1,710,241; Iowa, \$1,150,806; Indiana, \$1,057,688; Michigan, \$1,002,092; all others were under a million dollars each. In 1880, the largest number of columns of advertisements recorded in a single issue was returned by the New York *Herald*, and amounted to 92. The *Herald* has since largely exceeded 100 columns in a single issue, while the New York *World*, at lower rates, has printed 157 columns of advertisements on a single Sunday. The charges for advertising vary from 10 cents a line in the cheaper papers to 75 cents in the dearer, while in some of the trade papers it is not unusual to charge from \$1 to \$2.50 in favored positions next to or facing reading matter. While in the better class of metropolitan dailies the advertising business is conducted directly with the main or branch office, and at schedule rates, in the case of other papers it is largely worked through agents. This is particularly so with the weekly papers, in which the agents sometimes purchase space by the year, and take the responsibility and risk of filling it, and at other times take the advertising on commission. Very heavy advertising is also done by large business houses in the leading newspapers on yearly or half-yearly contracts, at considerable discount from the schedule rates. See Sampson's *History of Advertising* (1874). See **NEWSPAPER**.

ADVICE, n. *ād-vis'* [OF. *avis*, and *advis*, advice, opinion—from mid. L. *advisum*, advice, opinion—from L. *ad*, *viso*, I go to see: It. *avviso*—*lit.*, opinion given to]: a speaking to, as to conduct; admonition; counsel; intelligence; due notice given. **ADVISE**, v. *ād-viz'* [OF. *adviser*, to advise, to consider]: to speak to, as to conduct; to give counsel to; to inform; to consult: in *OE.*, to consider. **ADVISING**, imp. **ADVISED**, pp. *ād-vizd'*: **ADJ.** informed; cautious; prudent; counselled. **ADVISEDLY**, ad. *-lī*, thoughtfully; with de-

ADVICE—ADVOCATE.

liberation. ADVISEDNESS, *n.* state of being advised; deliberation. ADVISER, *n.* one who counsels. ADVISORY, *a.* *ād-vī-zēr-i*, containing advice. ADVISABLE, *a.* *ād-vī-zā-bl*, that may be done; prudent; open to advice. ADVISABLENESS, *n.*, and ADVISABILITY, *n.* *-bīl'ī-tī*, the quality of being advisable. ADVISABLY, *ad.* *-bīl*. ADVISEMENT, *n.*, ADVISING, *n.*, and ADVISO, *n.* in *OE.*, counsel; advice; consideration. ADVICE-BOAT, a vessel specially employed in carrying advices or dispatches.—*SYN.* of 'advice': information; notice; counsel; deliberation; admonition; consultation;—of 'advise': to apprise; acquaint; admonish; counsel; inform.

ADVICE: see BILL OF EXCHANGE.

ADVOCATE, *n.* *ād'vō-kāt* [*OF. advocat*; *F. avocat*, an advocate, a pleader—from *L. advocātus*, one who pleads—from *ad*, *voco*, I call, one called on or summoned for aid; one who pleads the cause of another in a court of law; one who defends: *V.* to plead the cause of another. ADVOCATING, *imp.* ADVOCATED, *pp.* ADVOCACY, *n.* *ād'vō-kā'sī*, the act of pleading for or defending another in a court of law. ADVOCATESHIP, *n.* the office of an advocate. ADVOCATION, *n.* *ād'vō-kā'shūn*, a pleading for. LORD ADVOCATE, in *Scot.*, the principal law officer of the crown and public prosecutor, who is virtually secretary of state for Scotland, and occupies a position similar to the attorney-general in England. QUEEN'S ADVOCATE, a lawyer appointed by the crown to advise and act as counsel for it, in questions of civil, canon, and international law; the principal law officer in crown colonies. FACULTY OF ADVOCATES, the bar of the supreme courts of Scotland incorporated as a society. JUDGE ADVOCATE, in *courts-martial*, one who conducts the prosecution.

ADVOCATE: generally defined as 'the patron of a cause,' though it does not appear that the 'patrons' who, in ancient Rome, assisted their clients with advice and pleaded their causes, were ever called by that name. Even in the time of Cicero the term *advocatus* was not applied to the patron or orator who pleaded in public, but rather, in strict accordance with the etymology of the word, to any one who in any piece of business was *called in* to assist another. There can be no doubt, however, that the forensic orators and jurisconsults of the later period of the republic, who followed law as a profession, and received fees (*honoraria*) for their services, occupied a position closely analogous to that of the A. of modern times, and thus it has been said that the profession is older than the name. The occupations of a jurisconsult and a forensic orator seem to have differed much as those of a consulting and a practising counsel now do. They might be exercised separately, but were generally combined; thus Cicero speaks of his master, Scævola, as 'the most eloquent of the learned, and the most learned of the eloquent' (*jurisperitorum eloquentissimus, eloquentium jurisperitissimus, De Or.*, i. 39). Ulpian defined an A. to be any person who aids another in the conduct of a suit or action (*Dig.* 50, *tit.* 13), and in other parts of the digest it

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is used as equivalent to an orator (see also Tacit. *Annal.*, x. 6), so that the word seems gradually to have assumed its modern meaning. The office of the A. or barrister who conducted the cause in public was, in Rome, as in Britain, altogether distinct from that of the procurator, or, as we should say, attorney or agent, who represented the person of the client in the litigation, and furnished the A. with information regarding the facts of the case. The distinction between these two occupations, however, obvious and important as it may seem to the British, does not everywhere prevail; and in many of the states of Germany, in Geneva, in the United States, and in some British colonies, for example, Canada, they are united in the same person. In England and Ireland, advocates are called *barristers*, under which title will be found a statement of the duties and responsibilities which the A. undertakes to his client, and of the state of the profession in these countries. In Scotland, as in France, the more ancient name has been retained. See ADVOCATES, FACULTY OF.

In France the *avocat* and *avoué* correspond very nearly to the barrister and attorney in England. The advocates do not form a corporation, in the technical sense, but are a free society or association (*ordre*), which has the power of protecting its members and of exercising internal surveillance and discipline over them. Neither do they exercise any ministerial functions like those which public authority has conferred, under certain conditions and responsibilities, on *avoués* and notaries. The French A. is simply a free man, who has graduated in law, and has the privilege of addressing the tribunals. The advocates who practice in each court form a separate college, admission to which can be obtained only with the approval of those who are already members. The French A. is not held responsible for his advice and for the facts contained in his instructions. He is entitled to plead covered (see BARRETTE); and as he has no action for his fees, they are paid in advance. The French advocates have on several occasions resisted, as an encroachment on their privileges, the attempt to compel them to grant receipts for their fees. It further belongs to the etiquette of the bar of France that, in communicating articles of process to each other, no acknowledgment shall be exchanged; and we are told, with honest pride, that during the many centuries that this custom has existed, not one single instance of its abuse has occurred.

In Belgium, in Geneva, and also in those of the German states by which the Code Napoleon has been received, the organization and discipline of this branch of the legal profession are similar to those in France. In the other German states, with the exception of Saxony, the formation of the advocates into a body has been perseveringly resisted by the governments. A general assembly of German advocates was attempted at Mayence in 1844, and in Hamburg in 1846; and in the latter city it actually took place in the following year, but led to no permanent results.

ADVOCATE, LORD, for Scotland, called also the King's or Queen's A.: the public prosecutor of crimes, senior coun-

ADVOCATES—ADVOCATUS DIABOLI.

sel for the crown in civil causes, and a political functionary of very great importance in the management of Scottish affairs. He may issue warrants for arrestment and imprisonment in any part of Scotland, and possesses many other discretionary and indefinite powers. As first law-officer of the crown for Scotland, the L.A., when in parliament, is expected to answer all questions relating to the business of Scotland, and to take the superintendence of legislation for that portion of the United Kingdom. The best historical account of this important, and, in many respects, anomalous office, is contained in G. W. T. Omond's *The Lord Advocates of Scotland* (2 vols. 1883). See PROCURATOR-FISCAL.

ADVOCATES, FACULTY OF, in Scotland: an organization of the legal profession, whose constitution was unquestionably derived from France. The profession seems to have existed in Scotland from a very early time; and in 1424 (c. 45) a statute was passed for securing the assistance of A. to the poor. But though existing as a profession, the A. of Scotland did not form a faculty or society till the institution of the College of Justice (q.v.) in 1532. At first, their number was limited to ten, but there is now no limit. The number on the rolls of the body is about 370; but the number of those who practice does not exceed 120. An advocate is entitled to plead in every court in Scotland, civil, ecclesiastical, or criminal, superior or inferior, and also before the house of lords. A party may manage his own cause in the court of session (q.v.), so far as oral pleading is concerned, but with exception of defenses, every paper in process must be signed by an advocate.

ADVOCATES' LIBRARY: belonging to the Faculty of Advocates in Edinburgh; established by Sir George Mackenzie, 1682. The number of volumes is estimated at about 250,000; the catalogue (7 vols. 4to.) was printed between 1867 and 1878. It is particularly rich in law, in Scottish history, and antiquities, in the works of the fathers and schoolmen, and theology in generally. The Spanish department is particularly valuable. Although the library belongs strictly to the Faculty of Advocates, yet under their liberal management it has in a great degree the character of a public institution.

ADVOCATION: a process formerly in use in the law of Scotland, to remove a cause from an inferior court to the supreme court, either for the purpose of review, or that the cause might be conducted in the court of session. The process of A. was abolished 1868.

ADVOCATUS DIABOLI, *äd-vô-kā'tūs dī-ă'bô lī*, the Devil's Advocate: name applied in the Roman Church to an accuser of one who is proposed for canonization. When it is proposed that a deceased person shall be canonized, an examination is had of his past life. In this process one party holds the office of accuser, or *advocatus diaboli*; and it is his duty to bring forward all possible objections against the proposed canonization; while on the other side the *Advocatus Dei* (God's advocate) undertakes the defense. Hence the term

ADVOWSON—Æ.

A.D. has been applied to designate any person who brings forward malicious accusations.

ADVOWSON, n. *ăd-vow'sŭn* [L. *advocātiōnem*, legal assistance, then a protector or defender: mid. L. *advocatio*; OF. *advoceson* and *advouson*, the right of presentation to a benefice: OF. *advoué*; old law Eng. *advowee*, the patron of a living]: right of perpetual presentation to a benefice. **ADVOWER** or **ADVOWEE**, n. *ăd-vow'ē*, one who has the right of advowson.

ADVOWSON: the right of presentation to a church or ecclesiastical benefice in England. Advowsons are either *appendant* or *in gross*. Lords of manors were originally the only founders, and, of course, the only patrons of churches; and so long as a right of patronage continues annexed or appended to the manor, it is called an A. *appendant*. Such rights are conveyed with the manor as incident thereto by a grant of the manor only, without adding any other words. But where the property of the A. has been once separated from the property of the manor by legal conveyance, it is called an A. *in gross* or at large, and is annexed to the person of its owner, and not to his manor or lands. Advowsons are further divided into *presentative*, *collative*, or *donative*. The first is where the patron has the right of presentation to the bishop or ordinary, and may demand of him to institute his clerk, if he find him canonically qualified. This is the most usual A. The second or collative A. is where the bishop and patron are one and the same person. In this case the bishop cannot present to himself, but he does by the one act of collation the whole that is done in common cases by both presentation and institution. The third or donative A. is when the sovereign, or a subject by his license, founds a church or chapel, and ordains that it shall be at the sole disposal of the patron, subject to his visitation only, and not that of the ordinary, and vested in the clerk by the patron's deed of donation without presentation, institution or induction. 'This is said to have been anciently the only way of conferring ecclesiastical benefices in England; the method of institution by the bishop not being established more early than the time of Archbishop à Becket, in the reign of Henry II.'—*Kerr's Blackstone*, vol. ii. p. 20.

ADYNAMIC, a. *ăd'i-năm'ik* [Gr. *a*, without; *dunāmis*, power]: without strength.

ADYTUM, n. *ăd'i-tŭm* or *ă-dī'tŭm* [L. *ad'ytum*—from Gr. *ad'uton*, not to be entered, holy]: the most sacred place in ancient heathen temples.

ADZE or **ADZ**, n. *ădz* [AS. *adesa* or *adese*, an ax or hatchet: Goth. *akwisi*; mid. L. and It. *azza*, an ax]: an edge-tool for reducing the surface of wood; a kind of ax (see Ax), of which it may only be a double.

Æ, *ē*: many words formerly beginning with *æ* are now spelt with *e*. When the word in *æ* is not found, turn to *e*: the L. *æ* represents the Gr. *ai*; the AS. *æ* is now represented by an *e*, *ai*, or *ea*; and the L. *æ* is now generally though

ÆCIDIUM—ÆGINA.

not uniformly represented by *ē*—that is, sounded as *œ* in *see*.

ÆCIDIUM, n. *ē-sīd'ī-ŭm* [Gr. *askion*, a wheel; *eidos*, resemblance]: a small fungus attacking grasses and other plants,—one species is the red gum of agriculturists.

ÆDILE, n. *ē'dīl* [*œdilis*, an ædile—from *œdēs*, a house]: an anc. Roman magistrate, who had the care of public buildings and works, etc.

ÆDILES: Roman magistrates who had the care of public buildings (*œdēs*), especially the temples, and also attended to the cleansing and repairing of the streets, the preparations for funerals, public games and spectacles, the inspection of weights and measures, the regulation of markets, etc.—At first there were only two *Æ.*, who were chosen from the plebeians, and styled *Æ. plebis*; afterwards two others, styled *Æ. curules* were chosen from the patricians (366 B.C.), and Julius Cæsar appointed a new order of *Æ. cereales* to take charge of the public granaries.

ÆGEAN SEA, *ē-jē'ăn*: old name of the gulf between Asia Minor and Greece, now usually called Archipelago (q. v.).

ÆGINA, or **EGINA**, *ē-jī'nă*: a Greek island about forty sq. m. in area, in the ancient Saronicus Sinus, now the Gulf of Egina. It is mountainous, with deep valleys and chasms. The modern town of Egina stands on the site of the ancient town, at the n.w. end of the island. There are considerable remains of the ancient city, and the ruins of solidly built walls and harbor moles still attest its size and importance. Pop. of the island about 7,000. The climate is mild, and from the absence of marshes, is specially healthy. The stony but fertile western plains produce almonds, wine, oil, cotton and corn. The most ancient name of the island was *Cenone*, and, according to tradition, the Myrmidons dwelt in its valleys and caverns. In ancient times, the people of *Æ.* had considerable importance in Greece, and their fleet distinguished itself in the battle of Salamis. Their prosperity excited the envy of the Athenians, who expelled the original inhabitants. The language, manners, and style of art among the ancient people of *Æ.* were Dorian.

ÆGINETAN SCULPTURES.

ÆGINE'TAN SCULPTURES: The small island of Ægina is important in the history of Grecian art. A severely natural character belongs to its works of sculpture,



Ruins of Temple of Ægina.

of which several have been discovered in modern times. On an eminence in the e. part of the island stand the ruins of a temple, usually called the temple of Jupiter Panhelle-



Front elevation of Temple of Ægina, restored.

nius, but now believed to have been a temple of Pallas or Minerva. Among these ruins a series of statues were excavated by a company of Germans, Danes, and Englishmen,

ÆGIS—ÆLFRIC.

which, in 1811, were purchased by Louis, then crown-prince of Bavaria, and are now the most remarkable ornaments of the Glyptothek at Munich. They are of various heights, and were evidently intended to decorate the tympana of the temple beside which they were found. The group that seems to have been designed for the rear tympanum is superior in preservation, and represents a combat of Greeks and Trojans for the body of a fallen hero. The other group is the contest of Telamon with Laomedon. The figures are true to nature, as in the old Greek style, with the structure of bones, muscles, and even veins, distinctly marked; but the faces have that unpleasant, forced smile which is characteristic of all sculpture before the time of Phidias.

ÆGIS, *n. ē'jis* [Gr. *aigis*, goat-skin, or a shield covered with it: L. *ægis*]: the shield of Jupiter, or of Minerva; a shield. In mythology, it was related that the shield of Jupiter was fashioned by Hephæstus (Vulcan). When Jupiter was angry, he waved and shook the Æ., making a sound like that of a tempest, by which the nations were overawed. The Æ. was the symbol of divine protection, and became, in course of time, the attribute exclusively of Jupiter and Minerva.



Minerva, with Ægis.
From an ancient statue.

ÆGLE, *ē'glē*: a genus of plants of the natural order *Aurantiaceæ* (q.v.), distinguished by a five-toothed calyx, linear elongate mucronate anthers, and a many-celled fruit. *Æ. Marmelos*, the tree which produces the *bhel* fruit of India, has ternate petiolate, ovato-oblong leaves, and the flowers in panicles. It is found from the s. of India to the base of the Himalaya Mountains. The fruit is delicious, fragrant, and nutritious. In an imperfectly ripened state it is an astringent of great effect in cases of diarrhœa and dysentery, and as such has lately been introduced into English medical practice. The root, bark, and leaves are also used as medicinal. The Dutch in Ceylon prepare a perfume from the rind of the fruit, and the mucus of the seed is employed as a cement for many purposes.

ÆGOSPOTAMI, *ē'gos-pot'a-mī*, or ÆGOSPOTAMOS (Gr. Goat-river), in the Thracian Chersonese, is famous for the defeat of the Athenian fleet by the Lacedæmonians under Lysander, which put an end to the Peloponnesian war and to the predominance of Athens in Greece, 405 B.C.

ÆGYPTUS: see DANAUS.

ÆLFRIC, or ALFRIC, *āl'frik*: a Saxon ecclesiastic of the 10th c., regarding whose age, writings, and personality even, there has been a great difference of opinion among antiquaries. He appears to have been the son of the Ealdorman, or Earl of Kent; but early manifesting a devotional

ÆLIA CAPITOLINA—ÆNEAS.

spirit, he entered the monastery of Abingdon, the members of which belonged to the Benedictine order. Towards the close of the 10th c., he became a priest in the cathedral of Winchester. He was next appointed abbot of St. Albans, then bishop of Wilton, and finally archbishop of York, although others appear to think him that Æ. who was archbishop of Canterbury. Æ., archbishop of York, died 1050; Æ., archbishop of Canterbury, in 1005. The writer Æ., whether of York or of Canterbury, was a man of superior attainments for his time, of excellent character, and one whose religious convictions were less disfigured by superstition than those of his contemporaries. The principal works ascribed to Æ. are—1. A Latin and Saxon glossary, printed at Oxford in 1659; 2. A Saxon version of most of the historical books of the Old Testament; 3. A charge to his clergy; 4. Two volumes of Saxon homilies; 5. A Saxon grammar in Latin.

ÆLIA CAPITOLINA: see JERUSALEM.

ÆMILIAN PROVINCES: see EMILIAN PROVINCES.

ÆMILIUS PAULUS, *ê-mil'ê-us pav'lus*. The most remarkable of this name was the son of the consul Æ. P., who fell in the battle of Cannæ, 216 B.C. Young Æmilius inherited his father's valor, and enjoyed an unwonted degree of public esteem and confidence. In B.C. 168 he was elected consul for the second time, and intrusted with the war against Perseus, king of Macedon, whom he defeated in the battle of Pydna. During the war his two younger sons died, and Æ. is said to have thanked the gods that they had been chosen as victims to avert calamity from the Roman people.

ÆNEAS, *ê-nê'as*: the hero of Vergil's *Æneid*, was, according to Homer, the son of Anchises and Venus, and was ranked next to Hector among the Trojan heroes. The traditions of his adventures before and after the fall of Troy are various and discordant. Vergil gives the following version: Æneas, though warned by Priam in the night when the Greeks entered Troy, to take his household gods and flee from the city, remained in the contest until Priam fell, when, taking with him his family, he escaped from the Greeks, but in the confusion of his hasty flight lost his wife Creusa. Having collected a fleet of twenty vessels he sailed to Thrace, where he began building the city of Ænos, but was terrified by an unfavorable omen, and abandoned his plan. A mistaken interpretation of the oracle of Delphi now led him to Crete; but from this place he was driven by a pestilence. Passing the promontory of Actium, he came to Epirus, and then continued his voyage to Italy and round Sicily to the promontory of Drepanum on the w., where his father, Anchises, died. A storm afterwards drove him to the coast of Africa, and landing near Carthage, he was hospitably received and entertained by Queen Dido. His marriage with Dido was prevented by Jupiter, who sent Mercury with a command that Æ. must return to Italy. Accordingly he sailed away, leaving the disappointed queen, who committed suicide. During his stay in Sicily, where

ÆNEID—ÆOLIPYLE.

he celebrated the funeral of his father, the wives of his companions and seamen, weary of long voyages without certainty of finding a home, set fire to his fleet. After building the city Acesta, he sailed for Italy, leaving behind him the women and some of the men belonging to his fleet. On landing in Italy, he visited the Sibyl at Cumæ, and received intimations of his future destiny. Then, sailing along the Tiber, and landing on the east side of the river, he found himself in the country of Latinus, king of the Aborigines. Lavinia, the daughter of Latinus, had been destined to marry a stranger, but her mother had promised to give her in marriage to Turnus, king of the Rutuli. A war ensued, which terminated in the marriage of Æ. with Lavinia. Their son, ÆNEAS SYLVIUS, as the ancestor of the kings of Alba Longa, and also of Romulus and Remus, was regarded as the founder of the Roman empire. It is hardly necessary to add that these statements have no historical basis.

ÆNEID, n. *ĕ-nĕ-ĭd*, the great epic poem by the anc. Roman, Virgil, of which Æneas, *ĕ-nĕ-ās*, is the hero.

ÆOLIAN, a. *ĕ-ō-lĭ-ăn* [L. *Æolus*, the god of the winds]: pertaining to Æolus or the wind.

ÆOLIAN HARP: a very simple musical instrument producing harmonic sounds when placed in a current of wind. It is formed by stretching eight or ten strings of catgut, all tuned in unison, over a wooden shell or box, made generally in a form sloping like a desk. The sounds produced by the rising and falling wind, in passing over the strings, are soft and lulling, and have been beautifully described by the poet Thomson, as supplying the most suitable kind of music for the *Castle of Indolence*.

ÆOLIAN ISLES: see LIPARI ISLANDS.

ÆOLIANS: one of the principal races of the Greek people, who were originally settled in Thessaly, whence they spread and formed numerous settlements in the n. of Greece and in the w. of Peloponnesus. In the 11th c. B.C., some part of them emigrated to Asia Minor, where they founded on the n.w. coast in Mysia, and the adjacent isles, more than thirty cities; among them, Smyrna and Mitylene in the island of Lesbos, where the Æolian dialect of the Greek language chiefly developed itself in the forms employed in the poetry of Alcæus and Sappho. The Æolian shared the fate of the other Grecian colonies in Asia Minor. First oppressed by the Lydian kings, then deprived of their independence by the Persians, they became a portion of the great empire founded by Alexander, and were ultimately absorbed in the Roman empire.

ÆOLIC, a. *ĕ-ō-lĭk*, of Æolia, a district of Asia Minor.
ÆOLIAN, a. pertaining to: N. an inhabitant of Æolia.

ÆOLIPYLE, or **ÆOLIPILE**, *ĕ-ō-lĭ-pĭl*, [named from *Æolus*, wind, and *pĭla*, a ball]: a hollow metallic ball from which, when heated, steam issues by orifices in two inner tubes so as to turn the ball; as water issuing from orifices turns Barker's Mill (q. v.). It was invented by Hero of Alexandria (q. v.). See STEAM ENGINE.

ÆON—AËRATED WATERS.

ÆON, n. *ē'ōn* [Gr. *aion*, an age]: a lengthened period; in the ancient Eastern philosophy, *æons* were supposed emanations from the one self-originated Being, among which were *zōē*, life; *logos*, word; *monōgēnēs*, only begotten; *plerōma*, fulness. See Gnosticism.

ÆPYORNIS, or **ÆPIORNIS**, n. *ē'pī-ōr'nīs* [Gr. *aipus*, immense; *ornis*, a bird]: an immense struthious or ostrich-like bird, now extinct, which some centuries ago inhabited Madagascar. It was much larger than the ostrich, and its eggs are the largest known. It had three toes like the *Dinornis* (q.v.).

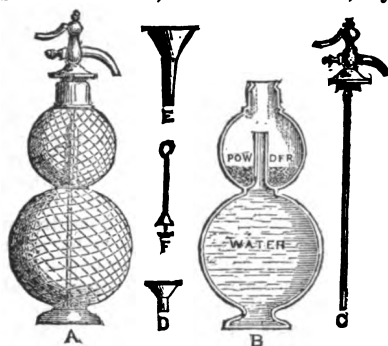
AERATE, v. *ā'ēr-āt* [Gr. or L. *āēr*, air]: to combine with air; to charge with carbonic acid. **A'ERA'TING**, imp. **AERATED**, pp. *ā'ēr-ā'tēd*, mixed with carbonic acid. **AERATION**, n. *ā'ēr-ā'shūn*, the operation or process of mixing with carbonic acid. **AERIAL**, a. *ā-ēr'ri-āl*, belonging to the air; high; lofty.

AËRATED BREAD: bread prepared by a process which dispenses with yeast, and avoids fermentation. The flour is placed in a strong inclosed iron box and moistened with carbonic acid water, prepared as stated under **A. WATERS**. The dough is then worked up by machinery for ten minutes or so inside the box, from which it is dropped into molds, which form it into loaves. It is then placed in an oven, when the carbonic acid, previously introduced with the water within the dough, expands and forms a light palatable bread. The advantages of this method of working bread are: 1. A saving of the waste caused by fermentation. 2. The process, instead of occupying eight or ten hours, is completed in half an hour. 3. The cost of machinery and gas is less than that of yeast used in the old process, when large quantities of bread are made. 4. The dough requires no handling to knead it and form it into loaves. 5. The bread is pure—it is merely flour, water, and salt. See **UNFERMENTED BREAD**.

AËRATED WATERS: refreshing, refrigerant beverages. The most common is *Carbonic acid water*, generally spoken of as soda-water, though it seldom contains any soda. It is prepared on the large scale by placing whiting, chalk, or carbonate of lime (CaO, CO_2) in a lead vessel with water and sulphuric acid (SO_3), when the sulphuric acid combines with the lime to form stucco or sulphate of lime (CaO, SO_3), and carbonic acid (CO_2) is evolved as gas. The latter is received in a reservoir, and is thereafter forced into water, so that the latter dissolves about five times its own volume of the gas. The water then constitutes a brisk sparkling liquid, with a pungent, but pleasant acidulous taste. On the small scale, and for family use, carbonic acid water may be conveniently prepared in the apparatus known as the *gazogène* or *seltzogene*. The complete apparatus is seen at A, and dissected at B and C. In proceeding to use the vessel, the lower globe at B is filled with water by means of the long funnel, E, taking care that no water runs into the smaller and upper division. The powders, consisting of bicarbonate of soda ($\text{NaO}, \text{HO}, 2\text{CO}_2$) and tartaric acid

AËRATED WATERS.

(T), are then placed in the upper globe by means of the small funnel D, and care is taken, by plugging up the



Gazogène.

tube communicating with the lower part by the stopper, F, that no powder passes into the larger globe. The long tube, C, is then inserted into the globes, and screwed well in. The apparatus is inclined till water from the lower globe enters and fills the upper globe about one-third; then it is placed erect, and allowed to be at rest for two hours, when, if the screw stopcock at the upper part be opened, the carbonated water will flow out readily into any vessel placed to receive it. The explanation of the action which goes on in the vessel is, that tartaric acid and bicarbonate of soda have no action on each other so long as they are dry; but whenever water is admitted, the tartaric acid combines with the soda and water to form tartrate of soda and water ($\text{NaO}, \text{HO}, \text{T}$), and at the same time, carbonic acid (CO_2) is given off, and descending the tube into the lower globe, dissolves in the water contained therein. Occasionally, bisulphate of potash is used instead of the tartaric acid, to save the greater expense of the latter.—The gazogènes can likewise be used in the preparation of true soda-water, or *Eau de Vichy*, by adding a little carbonate of soda to the water in the lower globe before charging with carbonic acid. A *wine* may be obtained by placing white wine with a little sugar-candy in the lower globe instead of water. *Sparkling lemonade* is procured when the carbonic acid water is run into a tumbler containing a little sirup of sugar; and A. *fruit-beverages*, when the water charged with carbonic acid is received in a glass containing about a table-spoonful of any of the fruit-sirups.

The less common A. W., prepared on the large scale, are—
 1. A. *soda-water* (true soda-water), obtained by adding 15 grains of crystallized carbonate of soda to each bottle before it is charged with the carbonic acid water; 2. A. *potash-water*, by employing in a similar way 20 grains of bicarbonate of potash; 3. A. *Selters-water*, when carbonate of soda and chloride of sodium (common salt) are dissolved in carbonic acid water; 4. A. *Carrara-water*, when finely divided Carrara marble is dissolved in the acid-charged water; 5. A. *lime-water*, when other forms of lime than the Carrara marble are used; 6. A. *magnesian-water*, when magnesia, or the carbonate of magnesia, is used; and A. *chalybeate-water*, when a compound of iron is dissolved in the carbonic acid water. The latter beverage has lately been employed in

AERIAL POISONS—AERODYNAMICS.

medicine, as an easy means of introducing iron into the blood, and with good effect. A. Carrara and lime waters are now administered in cases where the bony structure requires to be strengthened; and A. magnesia-water is a very agreeable mode of giving a patient a dose of magnesia. The well-known effervescing draughts called *soda-powders*, and *seidlitz-powders*, are two other kinds of A. drinks. In the former, bicarbonate of soda and tartaric acid are added to water in a tumbler, and a refreshing draught instantaneously prepared. *Seidlitz-powders* contain tartrate of soda and bicarbonate of soda in one paper, and tartaric acid in the other; when both are added to water, effervescence ensues.

A. W. likewise occur naturally. Water, as it is drawn from a spring, tastes differently from the same water after being boiled and cooled; and this is due to the unboiled water containing the gases oxygen, nitrogen, and carbonic acid—especially the latter—dissolved in it. Spring-water is therefore a natural A. beverage. Rain-water has a mawkish, insipid taste, mainly because of the minute quantity of gas therein dissolved; but when that rain-water trickles down the mountain-side, and is dashed from ledge to ledge of rock, it absorbs and dissolves the gases from the air, and is thus naturally aerated. Many waters are aerated in a natural but peculiar way, which confers upon them important medicinal properties. See MINERAL WATERS.

AËRIAL POISONS: see MIASMA.

AERIE or **EYRY**, n. *ēr'i* [F. *aire*, an eyry—from Ger. *aren*, to make one's nest—from Ger. *aar*; Ícel. *ari*, an eagle; mid. L. *ārēū*, the nest of a bird of prey]: the nest of an eagle or hawk.

AERIFY, v. *ā'ēr-ī-fī* [L. *āēr*, air; *fāciō*, I make; *fīō*, I am made]: to turn into air; to combine or charge with air. **A'ERIFY'ING**, imp. **AERIFIED**, pp. *ā'ēr-ī-fīd*. **AERIFICATION**, n. *ā'ēr-ī-fī-kā'shūn*, the changing solid or liquid bodies into air or gas; the act of combining or charging with air. **AERIFEROUS**, a. *ā-ēr-īf'ēr-ūs* [L. *fero*, I carry]: conveying air; as the windpipe or bronchial tubes. **AERIFORM**, a. *ā'ēr-ī-fuwm* [L. *forma*, a shape]: having the nature or form of air; not solid.

AERODYNAMICS, *ā'ēr-ō-dī-nām'-īks*: the branch of science which treats of air and other gases in motion. It examines first the phenomena of air issuing from a vessel, which correspond in many respects with those of water. See **HYDRODYNAMICS**. Much depends, as in the case of water, upon the nature of the orifice, whether a mere hole in the side of the vessel, or a tube or adjutage. Another subject of A. is the motion of air in long tubes, where the resistance of friction, etc., has to be ascertained. That resistance is found to be nearly in proportion to the square of the velocity, to the length of the tube, and inversely to its width. A. considers also the velocity of air rushing into a vacuum, of wind, etc. The instrument used for the latter purpose is called an anemometer. See **WINDS**. Air is found to rush into a void space at the rate of from 1,800 to 1,400 feet per second. One of the most important inquiries

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in A. is the resistance offered to a body moving in air, or—which is the same thing—the pressure exerted by air in motion upon a body at rest. The law may be stated, with sufficient accuracy for practical purposes, as follows: *The resistance or pressure is proportional to the square of the velocity.* We might gather this law from reason, without experiment; for if one body is moving through the air four times faster than another of the same size, not only will it encounter four times as many particles of air, but it will give each of them four times as great an impulse or shock, and thus encounter 4×4 or 16 times as much resistance.

This resistance is greatly increased by another circumstance, especially with great velocities. The air in front of the moving body becomes accumulated or condensed, and a partial or even entire vacuum is formed behind it. With a velocity of 1700 feet per second, for instance, the resistance is found to be about three times as great as the simple law of the square of the velocity would give. By the operation of these laws of resistance, a heavy body let fall with a parachute attached to it, comes, after a certain time, to move with a velocity approaching more and more nearly to a uniform motion.

AEROLITE, n. *ā'ēr-ō-līt* [Gr. *āēr*, air; *lithos*, a stone], a body falling from space upon the surface of the earth; also **AEROLITH**, n. *ā'ēr-ō-lith*, a meteorite. **METEORIC STONES**, **FIREBALLS**, and **SHOOTING-STARS** are now classed with *aërolites*, as varieties of the same phenomenon. *Aërolites* that fall during the day are observed to be projected from a small dark cloud, accompanied by a noise like thunder, or the firing of cannon; at night they proceed from a fireball, which splits into fragments with a similar sound. It is believed that the dark cloud that accompanies the fall of *aërolites* by day would be luminous at night; and smoking, exploding fireballs have sometimes been seen luminous even in the brightness of tropical daylight. The connection between *aërolites* and fireballs is thus established. Fireballs, again, cannot be separated from shooting-stars, the two phenomena being sometimes blended, and also being found to merge into one another, both with respect to the size of their disks, the emanation of sparks, and the velocities of their motion.

There are numerous records and stories in all ages and countries of the fall of stones from the sky; but until recent times they were treated by philosophers as instances of popular credulity and superstition. It was not till the beginning of the 19th c. that the fact was established beyond a doubt. —According to Livy, a shower of stones fell on the Alban Mount, not far from Rome, about B.C. 654. The fall of a great stone at *Ægospotami*, on the Hellespont, about B.C. 467, is recorded in the *Parian Chronicle* (q.v.), and mentioned by Plutarch and Pliny. It was still shown in the days of Pliny (d. A.D. 79), who describes it as of the size of a wagon, and of a burned color. In the year 1492, a ponderous stone, weighing 260 lbs., fell from the sky near the village of *Ensisheim*, in Alsace; part of it is still to be seen in the village church. An extraordinary shower of stones

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fell near L'Aigle, in Normandy, 1803, Apr. 26. The celebrated French philosopher, M. Biot, was deputed by government to repair to the spot and collect the authentic facts; and since the date of his report the reality of such occurrences has no longer been questioned. Nearly all the inhabitants of a large district had seen the cloud, heard the noises, and observed the stones fall. Within an elliptical area of seven miles by three, the number of stones that had fallen could not be less than two or three thousand; the largest were 17 lbs. in weight. These are only a few out of hundreds of instances on record.

As was natural with objects of such mysterious origin, meteoric stones have been regarded with religious veneration. At Emesa, in Syria, the sun was worshipped under the form of a black stone, reported to have fallen from heaven. The holy Kaaba of Mecca and the great stone of the pyramid of Cholula, in Mexico, have the same history.

The existence of such bodies once admitted led to assigning a meteoric character to strange ferruginous masses found in different countries and which had no history, or were only adverted to in vague tradition. Of this kind is the immense mass seen by Pallas in Siberia, now in the Imperial Museum at St. Petersburg. The largest known is one in Brazil, estimated at 14,000 lbs.

One constant characteristic of meteoric stones is the fused black crust, like varnish, with which the surface is coated. From the circumstance of this coat being very thin, and separated from the inner mass by a sharply defined line, it is thought to indicate some rapid action of heat which has not had time to penetrate into the substance of the stone. This view is favored by the fact that the stones are found in a strongly heated, but not incandescent state, when they fall. Their specific gravity ranges from two to seven or even eight times that of water.—As to their chemical composition, the predominating element is iron, in a native or metallic state, generally combined with a small proportion of nickel. According to Humboldt, the aërolites that fell in the neighborhood of Agram, Croatia, 1751, the Siberian stone, and specimens brought by that philosopher from Mexico, contain 96 per cent. of iron, while in those of Sienna the iron scarcely amounts to 2 per cent, and, in some rare instances, metallic iron is altogether wanting. A writer in the *Quarterly Review*, No. CLXXXIII., thus sums up the result of all the chemical analyses hitherto made: 'We find the actual number of recognized elements discovered in aërolites to be nineteen or twenty—that is, about one-third of the whole number of elementary substances (or what we are yet forced to regard as such) discovered on the earth. Further, all these aërolitic elements actually exist in the earth, though never similarly combined there. No new substance has hitherto come to us from without; and the most abundant of our terrestrial metals, iron, is that which is largely predominant in aërolites, forming frequently, as in some of the instances just mentioned, upwards of 90 parts in 100 of the mass. Seven other metals—copper, tin, nickel, cobalt, chrome, manganese, and molybdena—enter variously into the com-

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position of these stones. Cobalt and nickel are the most invariably present; but the proportion of all is trifling compared with that of iron. Further, there have been found in different aërolites six alkalies and earths—namely, soda, potash, magnesia, lime, silica, and alumina; and, in addition, carbon, sulphur, phosphorus, and hydrogen. Finally, oxygen is a constituent of many aërolites, entering into the composition of several of the substances just mentioned. As respects the manner of conjunction of these elements, it is exceedingly various in different aërolites. A few there are, especially examined by Berzelius and Rose, containing olivine, augite, hornblende, and other earthy minerals, and closely resembling certain crystalline compounds which we find on the surface of the earth.'

Beside those solid masses of considerable size, numerous instances are on record of showers of dust over large tracts of land, and it is remarkable that such dust has generally been found to contain small, hard angular grains resembling augite. Stories of the fall of gelatinous masses from the sky are ranked by Humboldt among the mythical fables of meteorology. It has been supposed that such fables may have originated in the very rapid growth of gelatinous algæ, as *Nostoc* (q.v.).

Fireballs and Shooting-Stars.—From the height and apparent diameter, the actual diameter of the largest fireballs is estimated by Humboldt to vary from 500 to 2,800 feet; others allow a diameter of about a mile. Shooting stars are much smaller, their weight varying from 30 grains to 7 lbs. In most cases of luminous meteors a train of light many miles in length is left behind. One or two instances are on record where the train of the fireball continued shining for an hour after the body disappeared. The *heights* of shooting-stars are found to range from 15 to 150 m. at the points at which they begin and cease to be visible. Their *velocities* vary from 18 to 36 m. in a second. When it is remembered that the velocity of Mercury in its orbit is 26.4 m. in a second, of Venus 19.2, and of the Earth 16.4, we have in this fact a strong confirmation of the planetary nature of meteorites.

One of the most remarkable facts connected with shooting-stars is that certain appearances of them are *periodic*. On most occasions they are *sporadic*—that is, they appear singly and traverse the sky in all directions. At other times they appear in swarms of thousands, moving parallel; and these swarms are periodic, or recur on the same days of the year. Attention was first directed to this fact on occasion of the prodigious swarm which appeared in North America, 1833, Nov. 12 and 13, described by Professor Olmsted of Yale College. The stars fell on this occasion like flakes of snow to the number, as was estimated, of 240,000 in the space of nine hours, varying in size from a moving point or phosphorescent line to globes of the moon's diameter. The most important observation made was that they all appeared to proceed from the same quarter of the heavens—the vicinity, namely, of the star γ , in the constellation Leo, and although that star had changed greatly its height and azimuth during the time that the phenomenon lasted, they continued to issue

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from the same point. It was afterwards computed by Encke that this point was the very direction in which the earth was moving in her orbit at the time. Attention being directed to recorded appearances of the same kind, it was observed with surprise that several of the most remarkable had occurred on the same day of November, especially that seen by Humboldt at Cumana in 1799, and by other observers over a great extent of the earth. The November stream was again observed in the United States in 1834, on the 13th and 14th, though less intense. Though often vague, and in some years altogether absent, this phenomenon has recurred with such regularity, both in America and Europe, as to establish its periodic character.

Another periodic swarm of considerable regularity is that appearing Aug. 9-14, noticed in ancient legends as the 'fiery tears' of St. Lawrence, whose festival is on Aug. 10. There are other periodic appearances; and Humboldt gives the following epochs as especially worthy of remark: Apr. 22-25; Jul. 17; Aug. 10; Nov. 12-14; Nov. 27-29; Dec. 6-12.

Various opinions have been advanced as to the origin of aërolites, and the theory of meteors in general. The hypotheses in answer to the question—Whence come those solid masses that fall upon the earth?—are of two kinds; some ascribing to them a telluric origin, and others making them alien to the earth. Of the first kind, is the conjecture that they may be stones ejected from terrestrial volcanoes, revolving for a time along with the earth, and at last returning to it. Another theory, which at one time found considerable favor, supposed that the matter of which aërolites are composed existed in the atmosphere in the form of vapor, and was by some unknown cause suddenly aggregated and precipitated to the earth. These conjectures are untenable in the face of the facts of the phenomena stated above, and are now completely given up.

In seeking a source beyond the earth, the moon readily presented itself. Olbers was the first to investigate, 1796, the initial velocity necessary to bring to the earth masses projected from the moon. This 'ballistic problem,' as Humboldt calls it, occupied during ten or twelve years the geometricians Laplace, Biot, Braudes, and Poisson. It was calculated that, setting aside the resistance of air, an initial velocity of about 8,000 ft. in a second, which is about five or six times that of a cannon-ball, would suffice to bring the stones to the earth with a velocity of 35,000 ft. But Olbers has shown, that to account for the actual measured velocity of meteoric stones, the original velocity of projection must be fourteen times greater than the above. It is against this lunar theory that we have no proof of active volcanoes now existing in the moon; and with the improvement of the telescope, the probability of the contrary is increasing. It is, accordingly, giving place to the planetary theory, above noticed—a theory which harmonizes better with the tendency of physical research and of speculation generally.

The discussion of hypotheses as to the genesis of the recognized planets out of portions of the gradually con-

AEROLOGY—AEROPHYTES.

tracting vaporous mass of the sun; the continued discovery of hitherto unobserved planets between the orbits of Mars and Jupiter; the countless multitudes of comets that are observed traversing our system in all directions, and undergoing appreciable alteration both of consistency and orbit;—all prepare us for the idea, that matter may exist in the inter-planetary spaces, in every variety of form and condition. To account for the phenomena of meteors as above described, we must suppose that there are both detached masses, each revolving in an independent orbit, and giving rise to *sporadic* meteors; and also connected systems, forming rings or zones round the sun. The intersection of the earth's orbit by such zones or streams, would account for the periodic swarms of meteors; and if we suppose the asteroids composing it to be irregularly grouped, we see a reason why the same stream should not be always of equal intensity. There may even be periodicity in this respect too. Between 1799 and 1833—two of the most brilliant manifestations of the November stream on record—there elapsed 34 years; and the next brilliant appearances were in 1866-67, as Olbers had predicted.

What causes the luminous and ignited condition of *aërolites*? Terrestrial magnetism was at one time suggested as the exciting cause. It is now recognized, however, that the atmosphere extends, although in a very rare condition, to at least a height of 200 m., and the ignition is believed to be caused by friction between the rapidly moving body and the air. As to meteors unattended by *aërolites*, we may suppose that some are merely deflected from their path by the proximity of the earth, are rendered luminous through a short arc, and continue their course with altered orbit, while the greater part are soon consumed and fall to the earth in impalpable dust. See METEORS.

AEROLOGY, n. *ā'er-ōl'ō-jī* [Gr. *āēr*, air; *logos*, discourse]: the science that treats of the air, its nature and uses. **AEROLOGIST**, n. *ā'er-ōl'ō-jīst*, one who studies the nature and effects of the air or atmosphere. **AEROLOGICAL**, a. *ā'er-ō-lōj'ī-kāl*, pertaining to. **AEROMANCY**, n. *ā'er-ō-mān'sī* [Gr. *manteia*, divination]: divination by means of the air and winds.

AEROMETER, n. *ā'er-ōm'ē-tēr* [Gr. *āēr*, air; *metron*, a measure]: an instrument for ascertaining the weight of the atmosphere, or of gases.

AERONAUT, n. *ā'er-ō-navot'* [Gr. *āēr*, air; *nautēs*, a sailor—from *naus*, a ship]: one who sails or floats in the air in a balloon; an aerial navigator. **AERONAUTIC**, a. *ā'er-ō-nav'ōtik*, pertaining to sailing in the air. **A'ERONAU'TICS**, n. plu. *-tiks*, the science or art of sailing in the air by mechanical means. See BALLOON.

AEROPATHY, n. *ā'er-ōp'ā-thī* [Gr. *āēr*, air; *pathos*, feeling]: a process for the cure of asthma and other diseases by subjecting the whole body to an atmosphere of compressed air which has been filtrated through cotton.

AEROPHYTES, n. plu. *ā'er-ō-fīts'* [Gr. *āēr*, air; *phūton*, a

ÆROPHYTES—AEROSTATICS.

plant]: plants which live exclusively in the air—*hydrophytes* are those living under water.

ÆROPHYTES: see **EPIPHYTES**.

AEROSTATIC, a. *ā'ēr-ō-stăt'ik* [Gr. *āēr*, air; *statos*, a standing still]: suspending in air. **A'EROSTAT'ICS**, n. plu. *-iks*, the science of the equilibrium of gases. **AEROSTATION**, n. *ā'ēr-ō-stā'shūn*, and **AERONAU'TICS**, n. plu. aerial navigation; the art of sailing in the air by mechanical means, such as in balloons. **AEROSTAT**, n. *ā'ēr-ō-stăt'*, the part of a balloon which contains the gas or rarefied air; a balloon.

ÆROSTATIC PRESS: a machine for extracting the coloring-matter from dye-woods and like materials. A vessel is divided by a horizontal partition pierced with small holes. Upon this the substance containing the color is laid, and a cover, also perforated, is placed upon it. The extracting liquid is then poured on the top, and the air being drawn from the under part of the vessel by a pump, the liquid is forced through the substance by the pressure of the atmosphere.

ÆROSTAT'ICS: a branch of science treating of the equilibrium and pressure of air and other gases, and of the methods of measuring it by the barometer and other instruments. The expansive force or pressure of atmospheric air varies with time and place. In a medium condition of the atmosphere, and near the sea-level, barometrical observations give the pressure or weight equal to that of a column of mercury, 30 inches high, or of a column of water about 34 ft. high. This makes the mean pressure of the atmosphere nearly 15 lb. on every sq. inch. This mean pressure of the atmosphere is generally taken as the unit or measure of expansive or elastic forces generally; any particular pressure is said to be equal to so many atmospheres. **Ærostatics** also investigates the phenomena of the compression of gases; in other words, the relation between the elasticity and the density or volume of a gas. According to the law of Mariotte, the expansive force of one and the same body of gas is proportional to its density; or, which is the same thing, the expansive force of a body of gas under different degrees of compression, varies inversely as the space which it occupies. If its elastic force, at one stage, be measured by 50 lbs., when compressed into half the space, that force will be 100 lbs. Connected with this is the investigation of the variation of density and pressure in the several vertical strata of the atmosphere. It is obvious that the weight of the atmosphere must diminish as we ascend, as part of it is left below; and it results from Mariotte's law, that at different distances from the earth's surface, increasing in arithmetical progression, the atmospheric pressure diminishes in geometrical progression. This principle furnishes the means of measuring heights by the barometer (q.v.).

The elastic force of air and other gases is very much increased by heat; and consequently, when allowed, they expand. It is found that a rise of temperature of 1° of Fahrenheit causes any gas to expand $\frac{1}{480}$ of its own bulk; and this expansion is uniform. If adding 10° to the

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temperature of a body of gas increases its bulk 3 cubic inches, an addition of 20° will give an increase of 6 inches; of 50°, 15 inches, and so on. This law was discovered by Gay-Lussac, and has been verified by subsequent investigators. Both it, however, and that of Mariotte, can be locked upon as only nearly true, and that within certain limits.

ÆRUGINOUS, a. *ē-rūj'ī nūs* L. *ærūgo* or *ærūg'inem*, rust of copper—from *æris*, copper]: pertaining to the rust of copper—viz., verdigris.

ÆSCHINES, *ēs'kī-nēs*, B.C. 389-314: an Athenian orator, second only to Demosthenes, whose contemporary and rival he was. Philip of Macedon was then pursuing his designs for the subjugation of the several Greek states; and while Demosthenes advocated the policy of opposing him before it was too late, Æ. was the head of the peace-party. Æ. was a member of more than one embassy sent by the Athenians to deal with Philip; and Demosthenes accused him of receiving bribes from the Macedonian monarch, and of betraying the cause of Athens and of her allies. There is no proof of such betrayal; and perhaps Æ. was deceived by the wily Philip into believing that he meant no harm to the liberties of Athens, and that peace was the best policy for his countrymen. The result justified the sagacious fears of Demosthenes, and condemned the selfish, isolating policy of Æ. When it was proposed to reward Demosthenes with a golden crown for his patriotic exertions in defense of his country Æ. brought an accusation of illegality against the proposer, Ctesiphon. Demosthenes replied, and Æschines being vanquished, and having thus incurred the penalty attached to an unfounded accusation, was obliged to retire from Athens. He finally established a school of eloquence in Rhodes, which had a high reputation. On one occasion he read to his audience in Rhodes his oration against Ctesiphon; and some of them expressing their astonishment that he should have been defeated in spite of such a powerful display, he replied: 'You would cease to be astonished if you had heard Demosthenes.' The oration against Ctesiphon and two others are the only authentic productions of Æ. that have come down to us. He d. at Samos.

ÆSCHYLUS, *ēs'kī-lūs*, the father of Greek tragedy: B.C. 525-456: b. Eleusis, in Attica. We have but scanty notices of his life. He fought in the battles of Marathon, Salamis, and Platea, witnessed the fall of Darius and Xerxes, and shared in the exulting sentiments which afterwards pervaded liberated Greece. Of the 70 or 90 tragedies ascribed to Æ., only seven have been preserved—*Prometheus Bound*, the *Seven against Thebes*, the *Persians*, *Agamemnon*, the *Choëphori*, *Eumenides*, and the *Suppliants*. These are sufficient to prove that Æ. was the creator of the Greek drama in its higher form. He introduced action in place of the perpetual chorus, and dramatic dialogue to supersede the long narrations of his predecessors, Thespis and Chœrilus. Scenic effects, masks, and dresses were other improvements introduced in the plays of Æ. The plots of his pieces are very simple, and display no ingenuity

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of construction or solution. His general tone is elevated and earnest, and shows a preference of strong to gentle emotions. Destiny is represented in its sternest aspect; gigantic heroes, Titans, and gods, rather than men, appear on the scene, and the lofty grandiloquence of the language is in accordance with the characters. In the choruses, the language is often turgid and obscure. For some reason, not well known, Æ. left his native city and went to Sicily, where he was honorably received by King Hiero. Here he died at Gela, and the inhabitants of the city raised a monument to his memory. In the poetical translation by Blackie, the non-classical reader may get some notion of the grandeur and fire of this greatest of all ancient dramatists.

ÆSCULAPIUS, *ēs-ku-lā'pī-us'*: appearing in Homer as an excellent physician of human origin, in the later legends becomes the god of the healing art. The accounts given of his genealogy are various. According to one story, he was the son of Coronis and the Arcadian Ischys. Apollo, enraged by the infidelity of Coronis, caused her to be put to death by Diana, but spared the boy, who was afterwards educated by Chiron. In the healing art, Æ. soon surpassed his teacher, and succeeded so far as to restore the dead to life. This offended Pluto, who began to fear that his realm would not be sufficiently peopled; he therefore complained to Jove of the innovation, and Jove slew Æ. by a flash of lightning. After this he was raised to the rank of the gods by the gratitude of mankind, and was especially worshipped at Epidaurus, on the coast of Laconica, where a temple and grove were consecrated to him. Here oriental elements, especially serpent-worship, seem to have been mingled with the rites and ceremonies. From Epidaurus the worship of the healing god extended itself over the whole of Greece, and even to Rome. According to Homer, Æ. left two sons, Machaon and Podalirios, who, as physicians, attended the Greek army. From them the race of the Asclepiades descended. Hygieia, Panacea, and Ægle are represented as his daughters. His temples usually stood without the cities, in healthy situations, on hill-sides, and near fountains. Patients that were cured of their ailments offered a cock or a goat to the god, and hung up a tablet in his temple, recording the name, the disease, and the manner of cure. Many of those votive tablets are still extant. The statue of the god at Epidaurus, formed of gold and ivory by Thrasy-medes, represented Æ. as seated on a throne, and holding in one hand a staff with a snake coiled round it, the other hand resting on the head of a snake; a dog, as emblem of watchfulness, at the foot of the deity. Praxiteles and other sculptors represented the god as an ideal of manly beauty, and closely resembling Jupiter; with hair thrown up from the brow, and falling in curls on each side. The upper part of the body was naked, and the lower was covered by a mantle falling in folds from the shoulders. He had sometimes a laurel wreath on his head, and a cock or owl at his feet; or was attended by a dwarf figure named Telesphorus. —ASCLEPIADÆ or ASCLEPIADES, the followers of Æ., who inherited and kept the secrets of the healing art; or, assum-

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ing that Æ. was merely a divine symbol, the Asclepiades must be regarded as a medical, priestly caste who preserved as mysteries the doctrines of medicine. The members of the caste, or medical order, were bound by an oath—the *Hippocratis iuramentum*—not to divulge the secrets of their profession. In Rome, B.C. 292, when a fatal pestilence prevailed, the Sibylline books commanded that Æsculapius must be brought from Epidaurus. Accordingly an embassy was sent to this place, and, when they had made their request, a snake crept out of the temple into their ship. Regarding this as the god Æ., they sailed to Italy, and, as they entered the Tiber, the snake sprang out upon an island where, afterwards, a temple was erected to Æ., and a company of priests appointed to take charge of the service and practice the art of medicine. Hippocrates is said to have descended from the Asclepiades of Cos, who traced their descent on the mother's side from Hercules.

ÆSCULIN, n. *ēs'kū-līn* [L. *æscūlus*, the horse-chestnut]: an alkaline principle discovered in the horse-chestnut; also spelt *esculin*.

ÆSIR: see SCANDINAVIAN MYTHOLOGY.

ÆSOP, *ēs'ōp*: ancient Greek writer, whose name is attached to the most popular of the existing collections of Fables. His history is very uncertain, and some critics have even denied his existence. First among these is Luther, in his preface to the *German Æsop*, 1530. We are told, however, on the authority of Herodotus (ii. 134), Diog. Laertius (i. 72), and Plutarch (*Sept. Sap. Conviv.*, and *De Sera Num. Vind.*), that Æ. lived in the latter part of the 6th c. B.C.; that he was a slave at Samos; that, on receiving his freedom, he visited Croesus and Pisistratus, by the former of whom he was commissioned to distribute some money among the citizens of Delphi, and that, on his refusal to pay it, in consequence of a dispute, he was thrown over a precipice by the infuriated mob. We are further informed that the Athenians erected a statue to him from the chisel of Lysippus. Whether this person was the author of the existing Æsopean collection or not we know, from Aristophanes and other authorities, that fables bearing his name were popular in the most brilliant period of Athenian literature. The conjecture of Bentley, however, seems well founded, that these fables were transmitted entirely through oral tradition. Socrates (*Phædo*, p. 61) turned such of them as he could remember into verse, of which Diog. Laertius has preserved a specimen; and the same was done by Demetrius Phalcreus, B.C. 320. The only Greek version, however, of which any entire fables remain, and which, as shown by Bentley, has furnished materials to subsequent collections, is that of Babrius (q.v.), a writer of some mark, who is supposed to have lived in the age before Augustus. Of the fables now bearing the name of Æsop, there are three sets, the first from a MS. of the 13th c., published, Florence, 1809; the second, a collection by Maximus Planudes, a monk of the 14th c., containing a life (supposed to have been the work of Planudes, till it was found in the earlier MS.) of

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Æsop, full of fabulous particulars; and the third a collection published, 1610, from MSS. found at Heidelberg. All these are contained in the edition of Schneider, Breslau, 1810. The resemblance between some of the fables and the personal peculiarities attributed in common to Æsop and to the Arabian fabulist Lokman have led some to conclude that the two men were identical. The tales seem to be all derived from the *Jatakas* or *Birth-stories of Buddha*. See **PHÆDRUS**.—A Roman actor of this name, **CLAUDIUS ÆSOPUS**, a contemporary and friend of Cicero, was as eminent in tragedy as Roscius was in comedy.

ÆSTHESODIC, a. *ēs'thēs-ōd'ik* [Gr. *aisthēsis*, perception; *ōdos*, away]: transmitting sensory impulses; sensitive.

ÆSTHETICS, n. plu. *ēs-thēt'iks* [Gr. *aisthētikos*, perceptive—from *aisthēsis*, the act of perceiving]: the science which treats of the beautiful in nature, in the fine arts, and in literature; the philosophy of taste. **ÆSTHETIC**, a. *ēs-thēt'ik*, or **ÆSTHET'ICAL**, a. *-i-kāl*, pertaining to the perception of the beautiful.

ÆSTHETICS: a term invented about the middle of the 18th c., by Baumgarten, prof. of philosophy in the univ. of Frankfort-on-the-Oder, to denote the science of the Beautiful, particularly of Art, as the most perfect manifestation of the Beautiful. It has the merit of being at once comprehensive and clear, and has therefore been widely adopted of late years by critics both in France and England.

The Beautiful (Gr. *to kalon*) was a favorite subject of contemplation among the ancients. The name of Plato is inseparably associated with it, but in his philosophizings he nowhere separated the Beautiful from the Good. Aristotle, again, from the immense acquaintance which he possessed with objects of art, deduced the most admirable laws and rules (Canons of Criticism), so that his *Poetics*, according to Schiller, constitute a true Rhadamanthine tribunal for poets. But the results that he arrived at are regarded by the *a priori* school of æstheticians as empiricism rather than science. Baumgarten they hold to be the first who considered the subject from the true scientific point of view, and therefore entitled to be called the founder of the philosophy of art. All sensuous apprehension, not in one form or manifestation only, but in every possible form or manifestation, was included in his view of the subject, and this conception he expressed by the word *Æsthetics*, from the Greek *aisthanomai*, I feel, indicating not absolute or objective knowledge of things, but such as is conditioned subjectively by the play of our sensibilities. The term is thus not confined to the limits of the Beautiful, though in fact we employ it in this partial signification. Beauty was, with Baumgarten, the result of the highest and purest æsthetic perception, to the realization of which the finer portion of our nature aspires; and to trace which through the whole sphere of art was the work of æsthetic philosophy (*Sinnenerkenntnis*). Kant subsequently, from his point of view, carried out the theory of the æsthetic faculty in his

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critical treatise on the power of the Judgment. Everything, he conceived, may be regarded æsthetically as well as absolutely, in reference to ourselves as well as in reference to nature. An object may be in harmony with our sensibilities as well as in harmony with the totality of material phenomena; or it may not be in harmony with the former and yet truly accord with the latter. So, too, with the judgment. It may choose to apprehend things in their adaptation to man, or in what is called the teleological point of view—that is, for their final end or objective adaptation to each other. Hence the æsthetical judgment considers objects as beautiful, agreeable or useful; while the teleological judgment strives to reach their absolute design, and remains indifferent to personal predilections. Why certain objects excite in us a purely selfish interest, and others a purely unselfish pleasure, Kant does not venture to determine, for he never investigates the objective quality of the Beautiful, but confines himself strictly to its influence upon the feelings and desires. Schelling was the first to undertake this inquiry after Schiller had paved the way for him in his treatise on *Æ*. Schiller, perhaps the most lucid and intelligible of German æstheticians, in a note to his twentieth letter on *Æsthetic Culture*, explains his conception of the new science as follows: All things that can ever be objects of perception may be considered under four different relationships. A fact that can relate directly to our sensuous condition—that is its physical quality; or to the understanding—that is its logical quality; or to the will—that is its moral quality; or to the entirety of our different powers rather than to any particular manifestation of these—that is its æsthetic quality. There is a culture for the health, for the understanding, for morality, and for taste or beauty, the last of which has for its design to bring out the totality of our sensuous and spiritual powers in their greatest possible harmony. Schiller's idea of the Beautiful is necessarily as comprehensive as his conception of the sphere of *Æ*. He will not admit that it is the result of a mere limited experience, taught us through the operation of phenomena, animate and inanimate, on our senses, but of pure abstract reflection. It is, therefore, a transcendental idea. It originates in the perfect union of matter and spirit. From this it follows that 'Beauty can be exclusively neither mere *life*, as some ingenious observers have maintained, nor mere *form*, as has been decided by some speculative philosophers and philosophizing artists' (for instance, Burke and Raphael Mengs).

Passing over Schelling's transcendental speculations, which are couched in a style not very intelligible to the English mind, we come to the theory of Hegel. Like that of Schelling, it also proceeds from the so-called metaphysics of the Beautiful. It is the absolute ideal realizing itself. Nothing is truly beautiful, except this. Nothing, therefore, which exists can be termed such. Out of the sphere of the pure reason we have only an eternal aspiration. In the finite mind, the absolute ideal is always striving to realize itself, but never completely succeeds. There is only a ceaseless

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approximation. Hegel then traces the growth and development of the Beautiful, the first form of whose existence is *natural* beauty, and, as Vischer justly adds, the beauty unfolded in history. But this beauty, whether of nature or history, is rare, accidental, fugitive, and tarnished by intermixture with the not-beautiful. This deficiency or limitation arises from its being unconscious of itself. The Beautiful is, so to speak, as yet in its infancy. It does not know either that it is or what it is. It first passes into self-recognition in the dawn of human intelligence, and its conscious realization of itself increases in proportion to the culture of the race or the individual. The highest finite realization of it is Art; for though the form of art be material, it is matter shaped according to an idea. The artist looks on the form simply as the objective embodiment of the idea—every remnant of rude nature being stripped off. Form, though springing out of matter, is thus a deliverance from matter, and the particular arts may consequently be regarded as the gradual working of the mind out of materialism. The formative arts—Architecture, Sculpture, Painting—are silent, heavy, still partly material. Music is an advance on these. It breathes in a higher region. The materialism of Sound becomes all but ideal. Poetry is a further advance. It is the pathway of the intellect to pure thought. Æsthetics, in this point of view, is a science, based on a knowledge of the historic development of the Beautiful. It wanders through its whole kingdom, of which Art is only a province, though, as has been seen, the richest and most valuable.

Such was the aspect in which Hegel regarded the new science. He fused it into his historico-transcendental metaphysics, and so stirred up regarding it the old quarrel which had agitated the latter. Realists made their appearance, who vigorously assailed the principles of Fichte, Schelling, and Hegel in their various applications to Philosophy, Theology, and Æsthetics. The reaction was and is most conspicuous in the second of these, but has as certainly manifested itself in the others also. It is denied that the Ideal conceived by man is superior to the Real, as it is in itself. It is man who lowers it by his inadequate apprehension of its harmony and perfection. The greatest artist does not strive to outshine or even to reach the beauty of nature, but to surpass himself in it. The whole historic theory of Hegel is likewise rejected, after severe and searching criticism, from a rationalistic point of view. Hegel conceives the first effort of art to have arisen from a longing on the part of the human spirit to emancipate itself from the thralldom of matter. This is the idealistic view of its beginning. Kugler, on the other hand, affirms that it arises from 'the necessity which man is under to bind thoughts to one firm spot, and to give to this memorial a form which may be expressive of the thought. The origin of Art is thus made retrospective, not prospective. This may be considered the realistic view of its beginning. So the question stands at present in Germany.

In France the founder of the Eclectic School of Philoso-

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phy, Victor Cousin, has eloquently expounded the Platonic view of *Æ*. In the second part of his treatise *Du Vrai, du Beau, et du Bien* (On the True, the Beautiful and the Good), he has a chapter on 'the Beautiful in Objects,' in which, after discussing the principal theories of the materialists and geometricians, and pointing out what he conceives to be the errors and limitations of such theories, he proceeds to a consideration of physical, intellectual, and moral beauty, endeavors to discover the qualities in which they agree, from this rises to the apprehension of an ideal beauty whose realization he finds in God. 'God,' says Cousin, 'in whom is combined absolute unity with infinite variety, is necessarily the realized ideal of all beauty.'

Speculations on this subject in English-speaking countries have been limited mostly to the Beautiful in form and color. We have not in general sought, like the Germans, to discover the *idea* of the Beautiful, but the Beautiful itself. Our criticism may, and indeed does seem meagre and unphilosophical to them, but it is at least clear, and its purpose obvious. We have put to ourselves this question: Are there, or are there not, constant qualities in certain objects which make them what we call beautiful? Does beauty arise from anything inherent in them, or does it depend upon accidents in us, such, for instance, as the complex and numberless phenomena of association? Is it objective or subjective?

The first publication on this subject of any consequence, except Lord Shaftesbury's *Characteristics*, in which there is set forth a 'rapturous Platonic doctrine' impossible to criticise, because unintelligible—was Dr. Hutcheson's *Inquiry* (1725). In this work, the existence of an 'internal sense,' through which we either obtain a perception of the Beautiful, or are made in some way conscious of its presence, was maintained. The notion of a sixth sense has been very severely criticised by Jeffrey in his celebrated article on Beauty.

Certain explanations and modifications of this theory were made by the followers of Hutcheson, but nothing really new was brought out till Edmund Burke published his *Treatise on the Sublime and the Beautiful* (1756). There is no work upon the subject so popular or so worthless. Every one has heard of it, large numbers have read it, and yet the fundamental principle is weak and absurd. He relies mainly on physiological considerations. 'All objects appear beautiful which have the power of producing a peculiar relaxation of our nerves and fibres, and thus inducing a certain degree of bodily languor and sinking!'

Sir Joshua Reynolds, a contemporary of Burke, maintained a very remarkable theory of the Beautiful, which he borrowed from the celebrated Père Buffier, and illustrated at great length. Beauty was conceived to be the mean between two extremes. This doctrine is open to the fatal objection that the most ordinary is therefore the most beautiful, and that, consequently, the greatest poem or the finest landscape must be that which is the most commonplace. Nevertheless, Sir Joshua does not hesitate to push

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his theory to extremities, declaring that if what we term the deformed or monstrous were only more common than what we call the beautiful, they would exchange names and sensations—a statement which may safely be left to refute itself.

The next work on this subject that excited any measure of popular attention was Alison's *Essays on the Nature and Principles of Taste* (1790). The theory propounded by this writer is generally known as the theory of Association. The most powerful exposition of the Association theory is that given by Jeffrey, in his famous article in the *Encyclopædia Britannica*, and in his critique on Alison in the *Edinburgh Review* (1811). According to Jeffrey: 'These emotions (that is, those excited by the contemplation of certain objects) are not original emotions, nor produced directly by any qualities in the objects which excite them; but are reflections or images of the more radical and familiar emotions to which we have already alluded, and are occasioned not by any inherent virtue in the objects before us, but by the accidents, if we may so express ourselves, by which these may have been enabled to suggest or recall to us our own past sensations or sympathies.' In his defense of this theory, Jeffrey is obliged to consider the theories of Stewart and Payne Knight, the former of which is partly, and the latter entirely opposed to his own. So long as he confines his argument to association in connection with *landscapes*, it seems conclusive; but when he comes to combat Payne Knight's doctrine as to the intrinsic beauty of colors, it ceases to be satisfactory. This writer maintains that colors possess a primitive and original beauty, which may be enriched by association, but which does not depend upon it. Jeffrey denies this, and attempts to prove that our perception of the beauty of color, instead of being 'a mere organic sensation,' arises from association alone. In the same way, he refuses to believe that there is any independent or intrinsic beauty in form; and conceives that architecture owes its beauty not to the essential harmony of its proportions, but to a variety of curious considerations on our part. He considers Alison's analysis of this beauty, with special reference to Greek architecture, 'perfectly satisfactory.' It arises 1st, from the association of utility; 2d, of security; 3d, of the skill of the architect; 4th, of magnificence; 5th, of antiquity; 6th, of Grecian greatness. To this it may be replied that such associations *increase* but do not *create* our perception of the beauty of Greek architecture.

Sir William Hamilton distinguishes beauty into absolute and relative. 'In the former case,' he says, 'it is not necessary to have a notion of what the object ought to be before we pronounce it beautiful or not; in the latter case, such a previous notion is required. Flowers, shells, arabesques, etc., are freely or absolutely beautiful. We judge, for example, a flower to be beautiful, though unaware of its destination, and that it contains a complex apparatus of organs all admirably adapted to the propagation of the plant. When we are made cognizant of this, we obtain, indeed, an additional gratification, but one wholly different from that

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which we experience in the contemplation of the flower itself apart from all consideration of its adaptations.' In the case of free or absolute beauty, both the imagination and the understanding find occupation; and the pleasure we experience from such an object is in proportion as it affords to these faculties the opportunity of exerting fully and freely their respective energies. Now, it is the principal function of the understanding, *out of the multifarious presented to it, to form a whole.* Sir William defines the Beautiful to be that 'whose form occupies the imagination and the understanding in a free, full, and consequently an agreeable activity.'

Ruskin has done much to awaken and extend the appreciation and enjoyment of art in this country, and in several of his works discusses æsthetic theories; especially in *Modern Painters*, he has attempted a systematic exposition of our ideas of beauty. Beauty is typical or vital, the former falling under the heads of infinity, unity, repose, symmetry, purity, moderation—all typical of divine attributes; while vital beauty is relative or generic. Ruskin's position is that of an extreme spiritualist, and takes no account of the value of association at all.

Bain, a prominent representative of the empirical school, has largely treated of æsthetics in his work of the *Emotions and the Will*, and has made an elaborate analysis of the elements in our perception and enjoyment of beauty (see ART). Herbert Spencer has endeavored to establish an original theory of the origin of our pleasure in beauty and art, based on the doctrine of evolution as developed by him: see SPENCER, HERBERT.

Others who have contributed to the discussion of the problem, beside those named above, are Winckelmann, Lessing, Goethe, Herbart, and Schopenhauer, in Germany; in France, Diderot, Jouffroy, and Taine; and in Britain, Reid, Addison, Lord Kames, and Hogarth. See ART: ASSOCIATION OF IDEAS: EMOTION: SUBLIME: also, various of the writers named. Schasler, Zimmermann, Lotze and Carrière have written in Germany works on the history of æsthetics; in France, the most notable work is Leveque's *La Science du Beau*; and in his *Mental and Moral Science*, Professor Bain discusses the principal theories.

ÆSTIVATION, n. *ēs'tī-vā'shūn* [L. *æstiva*, summer quarters—from *æstas*, summer]: in *bot.*, the disposition of the parts of the perianth in the flower-bud; the arrangement of the unexpanded leaves of the flower-bud, which burst in summer, as opposed to *vernation*, the arrangement of the leaves of the bud on a branch, which burst in spring; in *zool.*, the sleep or dormancy of animals during the hot or dry season in warm climates; the analogue of *hibernation* in cold regions. Æs'TIVAL, a. -*vāl*, pertaining to summer; produced in summer.

ÆSTIVATION, or ESTIVATION, in Botany: a term denoting the manner in which the parts of the flower are disposed in the flower-bud prior to its opening. Sometimes the *Æ.* is *valvate* or *valvular*, when the parts of the same verti-

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cil exactly meet together by their edges, like valves. But if the edges are turned in, the *Æ.* is *induplicate*; if they are turned out, it is *reduplicate*. In many flowers, the *Æ.* is *contorted* or *twisted*; sometimes it is spirally *imbricated*. In pentamerous flowers, it is very generally *quincunxial*, two of the parts being external, two internal, and one intermediate. In papilionaceous flowers (q.v.), the other parts of the corolla are generally included in the standard or vexillum, and this is sometimes called *vexillary* *Æ.* In poppies, the petals are generally crumpled together before flowering. The *Æ.* of the calyx is frequently of a different kind from that of the corolla. Thus, in *Geraniaceæ*, the *Æ.* of the calyx is imbricated, that of the corolla twisted. The manner in which the stamens and pistils are disposed in the bud is sometimes also noticed.

ÆTHELING: see **ANGLO-SAXONS.**

ÆTHIOPS, n. *ē'thī-ōps* [Gr. *aitho*, I burn; *ops*, the eye or countenance]: applied to certain chemical compounds from their black appearance.

ÆTHRIOSCOPE, *ēth'ri-ō-skōp*: instrument for measuring the minute variations of temperature due to the condition of the sky; consists of a differential thermometer (q.v.) whose bulbs are both within a cup-shaped mirror, one being in the focus of the mirror.

ÆTIOLOGY: see **ETIOLOGY.**

ÆTIOLOGY, or **ETIOLOGY**: a department of Biology (q.v.): also see **DARWINIAN THEORY.**

ÆTITES, n. *ē-tī'tēz* [Gr. *āētos*, an eagle]: a variety of nodular ironstone; eagle-stone.

ÆTIUS, *a-ē'shī-us*: a great Roman general, born in Mœsia towards the end of the 4th c. See **VALENTINIANUS III.**

ÆTNA: see **ETNA.**

ÆTOLIA, *ē-tō'li-ă*: district of ancient Greece, on the n. coast of the Gulf of Corinth. Ancient *Æ.* was divided from Acarnania by the river Achelous, and extended as far as the river Euenos. On the e. it was bounded by Locris and Doris; on the n. by Thessaly and Epirus; on the w., by Acarnania; and on the s., by the Bay of Corinth. In later times these boundaries were considerably extended to the n. and e. The country had few cities, was generally wild and barren, and according to Herodotus and Aristotle, was infested by lions on the banks of the Achelous and in other places. Here, according to the legend, Meleager slew the Calydonian boar (q.v.). The *Ætoli*ans make a great figure in the heroic age of Greece; but at the time of the Peloponnesian war, they were rude and barbarous. The *Ætolian* confederacy, first called into existence by the Samian war, B.C. 323, became more important in the time of the Achæan League (q.v.). The several states assembled annually in autumn at Thermum. This assemblage was styled the *Panætolicon*. At first, they called in the aid of the Romans against the Achæan League; but as they saw that the Romans had designs against the independence of *Æ.*, they next allied themselves with Antiochus of Syria, afterwards with Perseus

AFAR—AFFECT.

of Macedonia. In B.C. 169 they were compelled to share the fate of Macedon, and were subjugated by the Romans. Æ. now forms a governmental department, or nome, of the modern kingdom of Greece. The mountains in the n.e.—now styled Viena—form a wild offset of the Pindus chain, and slope steeply on the s.w. down to the central plains, partly covered with morasses and partly cultivated. S. of the lakes Apokuro (anciently Trichonis) and Zygos (Hyria) rises a range of mountains—the *Aracynthus* mountain of the ancients—which fall on the s.w. to a broad coast-level, occupied by morasses and lagoons; but on the s.e. side extend to the gulf, where the promontory of Antirrion reaches to within 2,400 yards of the opposite cape Rhion, thus forming the Strait of Lepanto (Naupactos). The chief rivers of Æ. are the Aspropotamo (Achelous), in the w., and the Fidaris (Euenos), in the e. The people in the plains are employed in agriculture and fishing; while in the mountain-districts some traces of the rude and martial character of ancient Æ. may still be found. The chief towns are Missolonghi and Lepanto (q.v.)

AFAR, ad. *à-fâr'* [AS. *on feorran*: *a*, on, and *far*]: at, to, or from a great distance.

AFEARD, a. *â-fêrd'* [AS. pp. of *aferan*, to frighten, to terrify—from *a*, on, and *feran*, to frighten]: in *OE.*, filled with fear; terrified; frightened.

AFFABLE, a. *âf-fû-bl* [F. *affable*—from L. *affābilis*, accessible, courteous—from *ad*, *fārī*, to speak]: that can be easily approached and spoken to; frank in speech and bearing; accessible; of easy manners in conversation. **AF-FABLY**, ad. *-blī*, in an affable manner; courteously. **AFFABILITY**, n. *âf-fû-bil'ī-tī*, the being easy of access to others; kind manner in conversation; also **AFFABLENESS**, n. *-bl-nēs*, quality of being affable.—**SYN.** of 'affable': courteous; condescending; accessible; complaisant; benign; mild; civil.

AFFAIR, n. *âf-fâr'* [F. *affaire*; OF. *affaire*, business—from L. *ad*, *facere*, to make]: a matter of any kind; business; concern; in *mil.*, a slight engagement, less than a battle. **AFFAIRS'**, n. plu. transactions in general; business. **AN AFFAIR OF HONOR**, a duel.

AFFEAR, v. *âf-fêr'* [*af* for *ad*, and *fear* (see **AFEARD**)]: in *OE.*, to frighten.

AFFECT, v. *âf-fêkt'* [F. *affecter*—from L. *affectāre*, to affect: L. *affectus*, influenced—from *ad*, *facere*, to do]: to act upon or influence in any way; to make a show of; to move or touch—as the passions; to be fond of. **AFFECT'ING**, imp.: **ADJ.** moving or exciting, as the passions; having power to excite. **AFFECTED**, pp. *âf-fêkt'êd*: **ADJ.** assumed; not natural. **AFFECT'EDLY**, ad. *-lī*, in an affected manner; with studied care for appearance' sake. **AFFEC'TER** or **AFFEC'TOR**, n. *-têr*, one who. **AFFECTATION**, n. *âf-fêk-tā-shûn*, the assuming or pretending to what is not real or natural. **AFFECT'EDNESS**, n. the quality of being affected. **AFFECT'INGLY**, ad. *-lī*, in a manner to excite the emotions. **AFFECTION**, n. *âf-fêk'shûn*, love for; attachment to; kindly

AFFEER—AFFILIATE.

feeling towards. **AFFECTIONED**, a. *ăf-fĕk'shŭnd*, affected; inclined; disposed. **AFFECTIONATE**, a. *ăf-fĕk'-shun-ăt*, warmly attached to; fond; having great love. **AFFECTIONATENESS**, n. the quality of being affectionate. **AFFECTIONATELY**, ad. -*lĭ*. **AFFECTIVE**, a. *ăf-fĕk'tiv*, having a tendency to affect. **AFFECTIVELY**, ad. *ăf-fĕk'tiv-lĭ*.—**SYN.** of 'affect': to concern; assume; pretend; influence; operate; melt; move; subdue; soften; overcome;—of 'affecting': pathetic; moving; tragic; exciting;—of 'affection': love; attachment; tenderness; kindness; passion; fondness;—of 'affectionate': kind; fond; loving; tender; attached; warm; devoted; earnest.

AFFEER, v. *ăf-fēr'* [OF. *affeurer* or *afforer*, to value at a price—from OF. *feur*; Scot. *fiars*, a market price—from mid L. *affōrārē*, to fix the price of a thing—from mid L. *forum*, a price—from L. *forum*, a market]: in OE., to fix the rate or price of; to establish; to confirm. **AFFEERING**, imp. **AFFEERED**, pp. *ăf-fĕrd'*. **AFFEER'ER**, n. one of the persons formerly appointed by a court to fix and regulate the amount of the fines. *Note*.—The Scotch word *fiars* is closely connected with OE. *affeer*, and has the same proximate origin. See **FIARS**.

AFFERENT, a. *ăf-fĕr-ĕnt* [L. *affĕrĕn'tem*, bringing or conveying a thing to a place—from *ad*, to; *fero*, I carry]: in *anat.*, conveying from the surface to the centre: N. a river or stream flowing into the sea, or a lake.

AFFETTUOSO, ad. *ăf-fĕt'too-ō-zō* [It.]: in *mus.*, tenderly.

AFFIANCE, v. *af-fi-ăns* [OF. *affiancer*, to affiance, to betroth: Sp. *afianzar*, to become bail: mid. L. *affidāre*, to pledge one's faith—from L. *ad*, *fidō*, I trust; *fidēs*, faith]: to betroth or pledge faith; to promise in marriage: N. a marriage contract; trust; confidence. **AFFIANCING**, imp. **AFFIANCED**, pp. *ăf-fi-ănst*. **AFFIANCER**, n. -*sēr*.

AFFIDAVIT, n. *ăf-fi-ăv'it* [old law L. *affidāvīt*, he made oath—from *affidārē*, to pledge one's faith—from *ad*, *fidem*, faith]: a declaration upon oath; generally, a declaration as to the truth of a written statement made on oath, or on solemn affirmation, before a magistrate, or other person legally authorized, which is afterwards signed by him; a deposition; an affirmation. See **AFFIRMATION**. It differs in law practice from a deposition, in this, that in the latter, the opposite party has had an opportunity to cross-examine the witness, whereas an affidavit is always taken *ex parte*.—*Affidavit to hold to bail* is in many cases required before the defendant can be arrested; such affidavit must be made by a person who is acquainted with the fact, and must state: 1st, an indebtedness from the defendant to the plaintiff: 2d, show a distinct cause of action; 3d, the whole must be clearly and certainly expressed.—*An affidavit of defense* is made by a defendant, or a person knowing the facts, in which must be stated a positive ground of defense on the merits.

AFFILIATE, v. *ăf-fi-lĭ-ăt* [F. *affilier*, to affiliate—from mid. L. *adfiliātus*, affiliated, adopted—from L. *ad*, *filĭus*, a son; *filĭă*, a daughter]: to receive into a family as a son; to

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adopt; to unite as one; to receive as an associate or member; to receive into relationship with the parent stock; to assign a child to a father. AFFIL'IA'TING, imp. AFFIL'IA'TED, pp. AFFIL'IA'TION, n. -shun [OF. *affiliation*, an adopting—from mid. L. *affiliatiōnem*, an assigning a son to]: the act of uniting or adopting; the assignment of the paternity of a child born out of wedlock; established connection.

AFFINAGE, n. *ăf'fîn-ăj* [F. from *affiner*, to refine; *fin*, fine—from L. *finitus*, finished]: in *chem.*, the refining of a metal.

AFFINED, a. *ăf'fînd'* [mid L. *affinārē*; OF. *affiner*, to bind one's self with a certain relationship—from L. *ad*, *finis*, a boundary, a limit]: joined or united by affinity; related to.

AFFINITY, n. *ăf'fîn'î-tî* [F. *affinité*—from L. *affinitātem*, relationship by marriage; L. *affinis*, bordering on or related to—from *ad*, *finis*, an end]: relationship by marriage; relation; agreement; in *chem.*, the combining power of bodies; in *bot.*, relation in all essential organs. SYN. of 'affinity': relationship; consanguinity; kindred; conformity; resemblance; connection.

AFFINITY, in Law: the relationship created by marriage between the husband and the blood-relations of the wife, and between the wife and the blood-relations of the husband. The relations of the wife stand to the husband in the same degree of A. in which they stand to the wife by blood or consanguinity, and *vice versa*. But between the relations of the two parties by A., there is no A. Thus, there is no A. between the husband's brother and the wife's sister; and by our law there is no impediment to their marriage. The question as to whether those who are related by A. stand in all respects in the same position as regards marriage with those connected by blood, is one on which much difference of opinion at present prevails. Marriage between a man and the sister of his deceased wife is at present forbidden by statute (5 and 6 Will. IV. c. 64); but an attempt is annually made in parliament to obtain its repeal. See MARRIAGE.

AFFINITY, CHEMICAL, or CHEMICAL ATTRACTION: the force which produces all chemical phenomena. It differs from the attraction of gravitation in acting, not between masses, but between atoms, and only when the atoms are at insensible distances. It differs also from cohesion, which unites the particles of the same substance, while A. unites atoms of different substances. The compounds thus formed are new bodies, often bearing no resemblance in appearance or other properties to the elements which combine to produce them. Thus, water results from the combination of two gases.

The strength of chemical affinity is different between different substances. Sulphuric acid combines with lime, and forms gypsum; but if potash be added, the sulphuric acid leaves the lime, and combines with the potash. As a sort of choice is here manifested, it is called a case of *elective* A. These elective affinities, however, are often altered by a change of temperature, or other circumstance.

AFFIRM—AFFLUENCE.

AFFIRM, v. *ăf-fĕrm'* [F. *affirmer*—from L. *affirmārē*, to affirm—from L. *ad, firmo*, I make firm—from *fīrmus*, firm—*lit.*, to make strong]: to assert with confidence; to maintain confidently as true; to declare solemnly. **AFFIRM'ING**, imp. **AFFIRMED**, pp. *ăf-fĕrmĭd'*. **AFFIRM'ABLE**, a. *-ă-bl*, that may be stated or affirmed as true. **AFFIRM'ABLY**, ad. *-bli*. **AFFIRM'ANT**, n. also **AFFIRM'ER**, n. one who. **AFFIRMATION**, n. *ăf-fĕr-mă'shun*, the act of asserting as true; a solemn declaration. **AFFIRM'ATIVE**, a. *-ă-tiv*, that declares or asserts: N. a word that says *yes*: *negative*, the opposite of *affirmative*, or a word that says *no*.—**SYN.** of 'affirm': to assure; avouch; asseverate; aver; protest; declare; assert; pronounce; establish; ratify; confirm.

AFFIRMATION: a solemn declaration, which, in the case of members of certain religious persuasions, is admitted in place of an oath. In most of the states a witness has right to choose whether to take oath or to affirm, the legal effect being the same. In A. the witness raises his right hand while uttering the formula. In Great Britain, the statute of 1869 extended the right of making A. in a court of justice to all on whose conscience an oath would not be binding. See **OATH**.

AFFIX, n. *ăf-fiks* [L. *affixus*, fixed, attached—from L. *ad, fixus*, fastened: mid. L. *affigārē*; OF. *aficher*, to fix to, to fasten]: something fastened to the end; a syllable or letter put to the end of a word. **AFFIX**, v. *ăf-fiks'*, to join to; to unite; to fix or fasten at the end; to subjoin; to fasten. **AFFIX'ING**, imp. **AFFIXED**, pp. *ăf-fiks't'*. **AFFIXTURE**, n. *ăf-fiks'tūr*, that which is affixed.—**SYN.** of 'affix, v.': to attach; connect; unite; annex; subjoin; fix; fasten; add.

AFFLATUS, n. *ăf-flă'tus* [L. *afflatus*, a blowing or breathing upon—from L. *ad, flatus*, a breathing]: a blowing or breathing upon; a breath; a breathing into by divine power; inspiration. **AFFLA'TION**, n. *-shun*, a breathing upon.

AFFLICT, v. *ăf-flĭkt'* [L. *afflictus*, dashed or struck down, afflicted—from *ad, flictus*, a striking: F. *affliger*, to afflict—*lit.*, to strike or dash against, as one thing against another]: to distress in some way; to give pain to, either in body or mind. **AFFLICT'ING**, imp. **AFFLICTED**, pp. *ăf-flĭkt'ĕd*. **AFFLICT'ER**, n. one who. **AFFLICTION**, n. *ăf-flĭk'shun*, distress either of body or mind; grief; pain. **AFFLICT'EDLY**, ad. *-li*. **AFFLICT'INGLY**, ad. *-li*. **AFFLICTIVE**, a. *ăf-flĭk'tiv*, giving pain; painful. **AFFLIC'TIVELY**, ad. *-tiv-li*.—**SYN.** of 'afflict': to pain; grieve; distress; hurt; wound; trouble; torment; harass;—of 'affliction': distress; trouble; grief; sorrow; pain; calamity; misfortune; wretchedness; misery; adversity.

AFFLUENCE, n. *ăf-floo-ĕns* [F. *affluence*—from L. *affluĕn'tiā*, abundance, plenty—from *ad, flu'ō*, I flow—*lit.*, a flowing or coming as to a point]: concourse; a stream of wealth; abundance of worldly riches; also **AFFLUENCY**, n. *ăf-floo-ĕn'si*. **AFFLUENT**, a. *ăf-floo-ĕnt* [F.], wealthy; rich in worldly goods: N. applied to any stream that flows di-

AFFLUX—AFFRIGHT.

rectly into another.—**SYN.** of 'affluence': wealth, opulence; riches; plenty; exuberance; abundance.

AFFLUX, n. *ăf-flûks* [F. *afflux*, the act of flowing—from L. *affluxus*, flowed towards—from L. *ad*, *fluxus*, flowed—*lit.*, something that flows to or towards like a fluid]: a flowing to; that which flows to; also **AFFLUXION**, n. *ăf-flûk-ahûn*.

AFFORD, v. *ăf-fôrd* [OF. *affeurer* or *afforer*, to set a price on a thing; said to be formed from AS. *ge*, and *forth*, signifying, to put forth, to offer—*lit.*, to be able to put forth at a price]: to yield or produce; to be able to bear expenses; to grant. **AFFORD'ING**, imp. **AFFORD'ED**, pp. *Note*.—**AFFORD** is formed from *forth*, as *utter* from *out*, and primarily signifies to put forth; to bring forward; to offer—as, 'I can *forde* it no better cheape,' that is, I cannot *afford* it at a cheaper rate.—Wedgwood, and Halliwell.—**SYN.** of 'afford': to yield; produce; bear; give; impart; allow; supply; in *OE.*, confer; grant.

AFFOREST, v. *ăf-fôr-est* [L. *ad*, and *forest*]: to turn into forest. **AFFOR'ESTA'TION**, n. *-shûn*, the turning of ground into forest ground, or treating it as such.

AFFRAY, n. *ăf-frâ* [F. *effrayer*, to scare, to dismay—from mid. L. *exfrigidârē*, to freeze thoroughly (see **AFRAID** and **FRAY**): a brawl or petty fight; a disturbance; a fray: V. in *OE.*, to freeze with fright; to affright; to terrify.—**SYN.** of 'affray, n.': brawl; scuffle; tumult; disturbance; quarrel; fight; encounter; feud; contest.

AFFRE, *ăf-r*, **DENIS AUGUSTUS**, Archbishop of Paris: 1793–1848. At the time of the Restoration, he was prof. of theology at the seminary of St. Sulpice; and on account of his prudent and temperate character was made Abp. of Paris by the government of Louis Philippe, 1840. Though not yielding a blind submission to all the measures of the government, he abstained from all offensive opposition. When Louis Philippe became an exile, and a republic was proclaimed, the abp. kept aloof from political strife, but had earnest care for the public welfare. During the insurrection in Paris, 1848, he climbed upon a barricade in the Place de Bastille, carrying a green bough in his hand, as a messenger of peace. He had scarcely uttered a few words, when the insurgents and the troops commenced firing again, and he fell mortally wounded. He died next day, June 27. He was the author of several theological writings, and of a work on Egyptian hieroglyphics.

AFFREIGHTMENT, n. *ăf-frâ't-měnt* [*af* for *ad*, to: Eng. *freight*, the charge for the carriage of goods, etc.: F. *affréter*, to charter or freight a vessel]: the engagement for taking a freight; the chartering or freighting of a vessel. **AFFREIGHT'**, v. for freight, which see.

AFFRIEND, v. *ăf-frěnd* [*af* for *ad*, to, and *friend*]: in *OE.*, to become friends; to be reconciled. **AFFRIEND'ING**, imp. **AFFRIEND'ED**, pp. made or become friends.

AFFRIGHT, v. *ăf-frit* [AS. *affrightan*, and *asorhtian*, to tremble with fear: *a*, intensive, *frihtan*, to terrify (see **FRIGHT**): to terrify by sudden fear: N. sudden dread· great

AFFRIQUE—AFGHAN.

fear; the cause of fear. **AFFRIGHT'ING**, imp. **AFFRIGHT'ED**, pp. **AFFRIGHT'ER**, n. one who frightens. **AFFRIGHT'FUL**, a. *-fool*, full of fright; dreadful. **AFFRIGHT'MENT**, n. *äf-frít'mènt*, the state of being afraid; terror.—**SYN.** of 'affright, v.': to alarm; to intimidate; confound; terrify; daunt; dismay; dispirit; appall; shock; dishearten.

AFFRIQUE, SAINT, *sänt äf-frék'*: town of the dept. of Aveyron, France, on the Sorgue, a tributary of the Tarn, 31 m. s.s.e. from Rhodéz. It is in a beautiful valley, between two mountains, and is surrounded by meadows, orchards, and vineyards. The streets are broad, but the houses are mostly old and mean. It has woolen and cotton manufactories and tanneries. There is a considerable trade in wool; and a principal article of trade is the celebrated *Roquefort Cheese*, made from ewe-milk, chiefly in the mountain pastures around the neighboring village of Roquefort. About 10,000 cheeses are made annually. They are kept in cellars by the cheesemongers to ripen. This kind of cheese was sent to ancient Rome, and is highly praised by Pliny. Pop. 6,000.

AFFRONT, v. *äf-frünt'* [*F. affronter*; *Sp. afrontar*, to face, to confront: *F. affront*, an affront—from *It. affronto*—from *L. ad, frontem*, to the front, to the forehead—*lit.*, to meet or oppose face to face]: to give cause of offense to; to insult slightly: *N.* anything done to offend; an outrage; open insult; in *OE.*, an encounter. **AFFRONT'ING**, imp. **AFFRONT'ED**, pp. **AFFRONT'INGLY**, ad. *-li*. **AFFRONTIVE**, a. *äf-frün'tiv*, tending to affront; abusive. **AFFRON'TIVELY**, ad. *-tiv-li*.—**SYN.** of 'affront, v.': to insult; outrage; dare; offend; displease; pique; nettle; brave; provoke; defy;—of 'affront, n.': insult; outrage; indignity; contumely; disgrace.

AFFUSE, v. *äf-füz'* [*L. affusus*, poured upon—from *ad, füsüs*, poured]: to pour upon; to sprinkle as with a liquid. **AFFU'SING**, imp. **AFFUSED**, pp. *äf-füzd'*. **AFFUSION**, n. *äf-fü'zhün*, the act of pouring upon.

AFFY, v. *äf-fi'* [*OF. affier*—from mid. *L. affidäre*, to confide in the fidelity of—from *L. ad, fidem*, faith, trust]: in *OE.*, to trust in the faith of any one; to betroth; to join; to confide; to put faith in. **AFFY'ING**, imp. **AFFIED**, pp. *äf-jid'*.

AFGHAN, n. *äf-gawn'*, a native or inhabitant of Afghanistan: **ADJ.** pertaining to.

AFGHANISTAN.

AFGHANISTAN, *af-găn'is-tân'*: land of the Afghans, occupies most of the e. part of the Iranian plateau, and includes the territory of the ancient provinces of Aria, Drangiana, and part of Arachosia. A. proper is bounded on the north by the Hindu Kush and its western continuation (Koh-i-Baba and Safed-Koh, ancient *Paropamisus*), east by the Suliman Mountains, south and west by Beloochistan and Persia, the frontiers being ill-defined. But beyond these limits the authority of the Ameer of Cabul has been extended northward, so as to include the khanates in the valley of the upper Oxus, the region known as Afghan Turkestan. This includes Badakshan (q.v.) and Wakhan, Balkh (q.v.), and the other Usbeg states of Maimana, Akcha, Andkhui, Shabir-kan, Kunduz, and Khulm. The frontier here is, since 1873, the upper Oxus to Khoja Salih, and thence a line to about Sarakhs on the Persian boundaries; the delimitation of the northern frontier towards Russian territory being defined by a Russian and British commission in 1884-85. The actual dependence of these states on Cabul is very slight; districts of Afghan Turkestan (which is mostly desert) are in the possession of independent Hazaras. The main divisions of A. proper are the basins of the rivers of Cabul (q.v.) and Herat (q.v.), and of the Helmund (q.v.), the highlands of Ghizni (q.v.), and those on the eastern frontier (see also CANDAHAR: JELALABAD; SEISTAN: etc.). Afghan is a Persian name; the inhabitants style themselves *Pushtaneh* (plural of *Pushtu*). In the n.e., the alpine region of the Hindu Kush, a wild mountain isthmus cleft by numerous ravines, and towering up into the clime of perpetual ice, unites the high masses of land in e. with those in w. Asia, and presents formidable obstructions to communication between the territory of the Oxus and that of the Indus. There are three main passes leading through the highlands of A. to the Indus—the Khyber (q.v.), the Kurram, and the Bolan (q.v.). The great differences of elevation, and the unequal distribution of water, render the climate very various. The date-palm ornaments the oases in the sandy desert to the southwest, while in the deep sheltered valleys of the east, the cultivation of cotton and sugar thrives; but the high terraces of Cabul and Ghiznee (8,000-9,000 feet above the level of the sea) are exposed to a severe winter, with heavy falls of snow. The country is for the most part bare, rugged, and thinly peopled, only some valleys being cultivated. The east of A. is rich in minerals; iron and copper especially are abundant.

The population of A. is far from homogeneous. An elaborate paper on Afghan ethnology in *Nature*, 1880, estimates that of a total population of 6,145,000, about 3,520,000 are Afghans proper and Pathans, both being of the old Persian or Iranian stock. *Pukhtu* or *Pushtu*, the language of the Afghans, is an Indo-Persian tongue; of this name the word *Pathan* is a corruption. Next come the Tajiks, also Iranians, of whom there are about 1,000,000. The remainder is constituted of Hindkis (of Hindu stock), Hazaras (Mongolo-Tartars), Kataghans and Kizlbashes (Turki), Baloches (Iranian), Badakshis, Kohistanis, and Siyah-Posh

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(all Aryan). The Afghans are Sunnite Mohammedans. The Tajiks and the Hazaras speak Persian and are Shi'ahs. The Kizilbashs speak Turki. The Hindkis speak Hindustani and are of Brahminical faith.

The Afghans claim descent from King Saul, and profess to be *Bani-Israel*; and their physiognomy used to lead travellers to believe in a Jewish connection. The Afghans seem to have been in their present seats in the 13th c., and for a century and a half were under Mongol rule. They first appeared as an independent power during the internal discords of Persia after the death of Nadir Shah. Ahmed Khan, of the race of Abdalli (1747-73), took advantage of these feuds, and liberated A. from Persian rule. His success founded the Douranee dynasty. When his son Timur died, 1793, a contest for the throne arose between the brothers Zemaun, Mahmud, and Shah Sujah, which ended in the success of Mahmud, who, however, was compelled to abdicate the throne in 1823, and died in 1829. The empire now fell into the hands of three brothers, of whom the oldest, Dost Mohammed, ruled at Cabul, the most important of the three divisions of the country, where he had a revenue of \$1,400,000, and an army of 18,000 men. Still the country was in an unsettled state, for Dost Mohammed was at war with Lahore in the east, and in the west the Persians had invaded Herat. The governor-general of India (Lord Auckland) declared war against A., 1838, Oct. 1, on the grounds that Dost Mohammed had unlawfully attacked the British ally, Runjeet Singh; that the military operations of the Afghans had betrayed a hostile purpose towards India; and that Shah Sujah, as the rightful heir to the Afghan throne, had placed himself under British protection. The British forces advanced through the Bolan pass to Candahar, where Shah Sujah formally claimed possession of the country. On July 21, the army encamped before Ghiznee, and after some hard fighting, that fortress was taken. Aug. 7, Shah Sujah, with the British forces, entered Cabul, and the conquest was regarded as complete. It was a gross mistake of the nature of the country and the character of the people. The land had been invaded, but was not conquered. Dost Mohammed had surrendered to the English; but his son, Akbar Khan, was actively engaged in a conspiracy, of which Sir Alexander Burnes and the envoy Macnaghten were not aware until it was too late. At the beginning of winter, when help from India was impossible, the outbreak took place at Cabul, when Burnes, Macnaghten, and several British officers were slain. It was then agreed that the invaders should leave the country; while, on the other hand, Akbar Khan and his confederates stipulated to provide an escort and make other necessary arrangements for the retreat. Depending on these promises, the British army left Cabul, 1842, Jan. 6, in order to return by the Khyber Pass into India; but neither escort nor provisions were supplied by the Afghan leaders, and the severity of the season increased the misery of the retreat. The fanatical tribes of the districts harassed the flank and rear of the army, and slew women and children as well as men,

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Out of a host of 16,000—or, if we include women and children, about 26,000—only one man (Dr. Brydon) escaped to carry the dismal tidings to General Sale, who still held his position at Jelalabad. Almost against his own will, the new governor-general, Lord Ellenborough, sent other forces into Afghanistan. Gen. Nott marched from Candahar to Ghiznee, which was again taken after a slight resistance, and then proceeded to meet the army which, under Gen. Pollock, had marched through the Khyber Pass to Cabul. Here the force of Akbar Khan was defeated and routed, and the place was as far as possible desolated. The English officers and their ladies who had surrendered themselves as prisoners to Akbar Khan were restored to liberty; and soon afterwards the troops marched back to India. It was believed now that the Afghans were deprived of all power to combine against the government of India; but this conclusion was too hasty, for in 1846 they formed an alliance with the Sikhs against the British; and the disturbances in the Punjab were not quelled without several sanguinary engagements. After the decisive battle of Gujerat, 1849, Feb. 21, the Sikhs were forsaken by the Afghans, and Dost Mohammed, with about 16,000 men, fled over the Indus. After this period, Dost Mohammed devoted his attention almost exclusively to the consolidation of his dominions. He died, 1863, appointing Shere Ali, one of his younger sons, as his heir. At first the choice was acquiesced in by the sixteen sons of Dost Mohammed, a large number of whom were governors of provinces; but disputes followed, which for many years kept A. in a state of anarchy. See CABUL. The British government of India had recognized Shere Ali at his accession, and when in 1868, after his long struggle with his brothers, he obtained possession of Cabul, and became *de facto* ruler of the greater part of Afghanistan, direct assistance was given him to secure the position for which he had fought. Sir John Lawrence, then Indian viceroy, sent him first two, afterwards four lacs of rupees with 3,500 stand of arms. The next viceroy of India, Lord Mayo, met the Ameer in state at Umballa, in March, 1869. It was then explained to him that Her Majesty's government had no desire to interfere with the affairs of A., except to check civil war, and by so doing, to secure the peace and prosperity of the country. This intimation was accompanied by another large present. In the same year, the Ameer conceived the idea of invading Bokhara (q.v.) and attacking the Russians, but was restrained by English advice. After 1869, Shere Ali endeavored to secure tranquillity in Afghanistan. He was alive to the strife that had been occasioned by intrusting power to relatives, and he endeavored to replace the members of his family as much as possible by strangers. He also indicated very distinctly that he did not intend to select as his heir his son Yakoob—who, at an early age, had shown great ability as governor of Herat, and had, on many occasions, given his father most valuable assistance—but a younger son, Abdullah. The claims of Yakoob to share in the government of A. were ignored, and the result was that, in 1870 he headed a rebellion against his father;

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but in the following year a reconciliation was effected through the intervention of England. In 1869 it was settled between England and Russia, that all the provinces between the Oxus and the Hindu Kush should be treated as part of A. In 1878, in consequence of new Russian diplomatic relations to A., Shere Ali was invited to receive a British mission. The refusal of the Afghans to admit the mission, which had advanced to the mouth of the Khyber Pass, led, after some fruitless negotiations, to war. Hostilities began by the forcing of the entrance to the Khyber towards the end of November. There was some severe fighting in the passes, but the invaders were everywhere successful. Before the end of December, Jelalabad was occupied without resistance, and Candahar a little later. Shere Ali, who had fled, died early in 1879; and Yakoob Khan, proclaimed Ameer, made peace in May. It was provided that there should be a British resident at Cabul; and that Britain should defend A. against foreign aggression, the Ameer receiving a subsidy. The Kuram, Pishin, and Sibi valleys became British territory, and the Khyber and Michni passes came under British control. But in September of the same year the revolted troops of the Ameer surrounded and attacked the British Residency. The Resident, Sir Louis Cavagnari, and his staff, with almost the whole of their Indian guard, were slain after a desperate but bootless struggle. Measures were immediately adopted by the Indian government for punishing the outrage. The Ameer put himself under British protection, and abdicated his sovereignty; and after some fighting Cabul was occupied by English troops in the beginning of October. The war was maintained in a desultory way; and it was not till the middle of 1880 that peace negotiations were again fairly undertaken. Progress seemed to have been made when Abdurrahman, son of Dost Mohammed's eldest son, and long under Russian protection, was proclaimed Ameer of Cabul. A few days afterwards England was startled by the intelligence that an English force had met with a very severe defeat near Candahar at the hands of Ayoob Khan, Yakoob's brother. The disaster was avenged Sep. 1, when General Roberts, marching from Cabul, routed and dispersed Ayoob's army; and shortly thereafter the English troops began to be withdrawn from A., leaving till 1881 a force in Candahar and its neighborhood.

AFIELD, ad. *ă-fēld'* [AS. *a*, on, and *feld*]: to or in the field.

AFIUM-KARA-HISSAR, *ă-fē-ôm-kâ'r-â-his-sar'* (*Opium Black Castle*): city of Asia Minor, in the pashalic of Anatolia, 170 miles east-by-north from Smyrna; near the Akar, partly on level ground, and partly on a rising ground among rocks. Above the city towers an isolated rock of 300–400 feet in height, almost precipitous on most sides, and very steep on that by which alone it is accessible. The summit has in former times been fortified. The streets of the city are very narrow. Most of the houses are of stone, and well built. A great trade is carried on, the city being an entre-

AFLOAT—AFRESH.

pôt between Smyrna and Europe on the one hand, and Armenia, the countries on the Euphrates, and Persia on the other. The products both of Europe and the east are to be found in its markets. A principal article of trade is opium, produced in the neighborhood, and from it the city derives its name. There are here and in the neighborhood manufactures of felts, carpets, arms, and saddlery. The saddlery of A. was formerly in demand throughout the whole Turkish empire, but the demand for it has greatly fallen off. Pop. supposed about 60,000.

AFLOAT, ad. *ă-flôt'* [AS. *a*, on, and *float*]: on the water; borne upon the water and moving; not sinking.

AFOOT, ad. *ă-foot'* [AS. *a*, on, and *foot*]: on foot; in action or motion.

AFORE, prep. *ă-fôr'* [AS. *onforan*, in front; *a*, on, and *fore*]: in *OE.*, prior or superior to; sooner; before; in presence of: AD. in time past; first; in front. **AFOREGOING**, a. *ă-fôr'gô-ing*, going before; that precedes. **AFOREHAND**, ad. in time gone by; in *OE.*, well provided. **AFOREMENTIONED**, a. mentioned before. **AFORENAMED**, a. named before. **AFORESAID**, a. mentioned in a preceding part. **AFORETHOUGHT**, a. *-thawt*, premeditated—as, malice aforethought. **AFORETIME**, ad. in time past.

A FORTIORI, a. or ad. *ă-fôr'shî-ôr'î* [L. *a*, with; *fortis*, strong, *fortiôr*, stronger]: for stronger reasons; for more weighty considerations.

AFRAGOLA, *ă-frâ-gô'lâ*: a commune and town of Italy, 6 m. n.n.e. of Naples. The manufacture of straw bonnets is carried on extensively. Pop. of commune about 18,000.

AFRAID, a. *ă-frâd'* [AS. pp. of *AFFRAY*, v., which see]: filled with fear; terrified. I'M AFRAID OF IT, I fear or dread it much; I have little doubt it is true, or has happened.—**SYN.** of 'afraid': fearful; timid; timorous; terrified; frightened.

AFRANIUS, *ă-frâ'nî-us*, **LUCIUS**: a Latin comic poet and orator who lived about a century before Christ. Cicero and Quintilian speak highly of his plays, but only fragments of his works remain.

AFRESH, ad. *ă-frësh'* [AS. *a*, on; *fersc*, pure, sweet]: again; anew; recently.

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AFRICA, *ăf'ri-kă*: the second in point of size of the great divisions of the globe, has long been truly the 'dark continent,' the land of mystery; but of late much has been done to open it to us by the enterprise of explorers, the zeal of missionaries, the perseverance of commercial speculation, and the military aggressions of Europeans. The chief hinderances are the fewness of the accessible points on the coast, the pestilential climate of the marshy lowland bordering on the sea, the barrenness of vast tracts like the desert of Sahara, and the barbarism and sanguinary character of the natives.

The valley of the Nile was known in the earliest period of history as the nursery of commerce, arts and sciences; but while Egypt was flourishing, the rest of A. was almost totally unknown, and was vaguely spoken of as Libya. The Greeks and the Romans penetrated into A., probably as far as the Niger: but they had scarcely any definite knowledge of the countries lying beyond Numidia, while s. A. was entirely unknown. The tradition that Jewish and Tyrian merchants, on their voyages to Ophir, explored the east coast of A., is dubious; but another account, that, in the time of Pharaoh-Necho, the Phœnicians circumnavigated A., seems to be well authenticated; and it is probable that the Carthaginians had a better knowledge of parts of the interior than we have in the present day. For a history of the older discoveries in A., see works on discoveries and travels in Africa by Murray (1817) and Leyden (1799); and E. H. Bunbury's *History of Ancient Geography* (1880).

The 15th c. was marked by an extension of geographical knowledge in A. as elsewhere. Henry the Navigator sailed round the formidable Cape Nun (*non plus ultra*); Diaz and Vasco de Gama discovered the Cape of Good Hope; and both the western and the eastern coasts were partly explored by several European voyagers. The older travels and discoveries may be arranged in the following order: in the 14th c., the travels of the Arabian Ebn Batuta in the north of A.: in the 15th c., the Portuguese discoveries of Madeira, Cape Blanco, Senegal, Guinea, Benin, the Cape of Good Hope, etc., and the navigation of the east coast by the Portuguese Covilham, who first travelled in Abyssinia: in the 16th c., the travels of Leo Africanus through Barbary and Sahara to Abyssinia; the travels of the German Ranwolf in n. A., and Windham's voyage to Guinea, which was followed by several other expeditions in 1554 and 1562. In 1570 and 1600 the Portuguese visited Monomotapa, then a powerful state near the Mozambique coast. In the 17th c., the Englishmen Jobson and Thomson, in their journey to Timbuktu, opened British commerce with A., and the slave-trade immediately followed. In 1662, a French colony was on the Senegal, and many exploring journeys to the interior were made by Renouard and others. In 1624, the Jesuit Lobo endeavored to find a way from the equator through the interior as far as Abyssinia. Thevenot's journey to Egypt, 1652; the English occupation of Cape Coast, 1664; Brue's voyage to Senegambia, and several other visits to the western coast, mark the progress made in the latter half of the 17th c.

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In the 18th c., various additions were made to the world's knowledge of A. In 1788, the African Society was founded in London, and, under its direction, Ledyard and Lucas were sent to explore the Niger, and were followed by Major Houghton. The English colony of Sierra Leone was founded 1790. The French expedition to Egypt, towards the close of this century, gave a new impulse to researches in A.

In the 19th c., the most various motives have co-operated to extend the knowledge of this vast continent. The captains of English cruisers, employed to suppress the slave-trade, have supplied valuable information; the governors of the colonies and private merchants have contributed their share; and enterprising travellers from all sides of the coast have sought paths to the interior. The works published on A. since the year 1800 are consequently very numerous. A few of the more important may be mentioned. In 1802-05, Lichtenstein travelled in the district north of the Cape of Good Hope, and first furnished information regarding the Bechuana tribe. The travels of Mungo Park from Timbuktu to Bussa are well known. In 1809, Burckhardt was sent out by the African Society, and his explorations, rich in manifold results, occupied the years 1812-16. To the French we are indebted for much valuable information concerning Marocco, Algeria, and the neighboring parts of Sahara. The labors of Oudney, Clapperion, Denham, and Lander, in the Sahara and Soudan, are memorable by the discovery of Lake Tchad and the course of the Niger. Since about 1840, our knowledge of s. A. has received many important additions from the missionaries stationed there, especially Moffat; while David Livingstone, who, 1843-73, was engaged in trying to open the countries north of the Cape of Good Hope, penetrated in 1849 as far as Lake N'gami, in 20° s. lat.; and in 1853, ascending the Leeambye (Zambesi) northward for several hundred miles, succeeded in crossing the continent to Loando on the west coast. Having retraced his steps to the point of the Zambesi from which he had started, the adventurous traveller next followed the stream till he reached the east coast, at Quilimane, in 1856. From 1859 to 1863 he made various explorations of Lake Nyassa and the neighboring regions. Again setting out in 1866, he found, in the region south of Lake Tanganyika, the river Chambezi. This river, which is specially known by this name ere it falls into Lake Bemba or Bangweolo, is known between that lake and Lake Moero as the Luapula, and further on in its course as the Lualaba; and was by Livingstone traced through these lakes as far as 4° s. lat. Livingstone's belief was that this basin, now known to be the upper Congo, contained the headwaters of the Nile. In 1871, with Stanley, he found the river Rusizi flowing into the north of Lake Tanganyika. His last enterprise consisted in further exploration of these regions and new efforts to find the Nile sources. He died at Ilala, beyond Lake Bemba, May, 1873. Burton and Speke, crossing the Border Mountains from Zanzibar, 1857, discovered Lake Tanganyika; and the former then journeying to the n.e., discovered the southern part of the Great

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Victoria Nyanza, which he supposed to be the head reservoir of the Nile. A second expedition, undertaken by Speke and Grant in the end of 1860, penetrated as far n. as Gondokoro on the White Nile, and added vastly to our knowledge of the eastern equatorial regions of Africa. At Gondokoro, Speke and Grant were met by Mr. (now Sir Samuel) Baker. Baker, accompanied by his heroic wife, pushed on to the s. and discovered in 1864, w. of the Victoria, another great lake, which he called the Albert Nyanza. He returned in September, 1873, from a second expedition, of a military character, undertaken, 1869, at the expense of the pasha of Egypt, to suppress slavery in the upper regions of the Nile. The geography, language and manners of the inhabitants of Abyssinia, Sennaar, and Kordofan have also during late years been greatly illustrated by the efforts of various European travellers. The researches of Dr. Barth and his companions, 1850-55—investigating the same central division of the continent as Clapperton and Denham—and Dr. Schweinfurth's travels, 1868-71, in unexplored regions, have enriched our store of knowledge regarding this land of mystery. In 1874-5, Lieutenant Cameron surveyed the lower half of Lake Tanganyika, and walked across tropical Africa from e. to w., almost determining the source of the Congo. Mr. Stanley explored the Victoria Nyanza and its affluent, the Shimiya, in 1875-6. Then striking the Lualaba at Nyangwe in the end of 1876, he forced his way down the stream, and arriving at the mouth of the Congo in autumn, 1877, demonstrated that the Lualaba and the Congo are identical. In 1877-79, Major Serpa Pinto crossed the region lying between Benguela and Durban in Natal. In 1880, Mr. Joseph Thomson explored the route between Nyassa and Tanganyika; and in 1884, he made his memorable journey from Mombasa by Kilimanjaro and Kenia to the Victoria Nyanza (see below).

A. lies between lat. $37^{\circ} 2'$ n. and $34^{\circ} 50'$ s., and long. $17^{\circ} 30'$ w. and $51^{\circ} 30'$ e. It is of an irregular triangular form, with the vertex towards the s., having the Mediterranean on the n., the Isthmus of Suez, Red Sea, and Indian Ocean on the e., and the Atlantic on the w. The formation of the Suez Canal has nominally converted Africa into an island. The coast-line is marked by few indentations or projections; the most important gulf being that of Guinea, on the w.; and Capes Bon, Verd, Good Hope and Guardafui, the extreme points respectively on the n., w., s., and e. The greatest length of the continent, taken from n. to s., is about 4,985 miles; its greatest breadth, from e to w, 4,615; and its area, including the adjacent islands, not less than 11,854,000 sq. miles.

What is known of the physical features of A. may be shortly sketched under the following heads: 1. The triangular region south of Cape Guardafui and the Gulf of Guinea is mostly a high table-land, having fringes of mountains crowning its edges. Between the coast and the beginning of the elevation runs a belt of low lands, varying from 50 to 300 miles in breadth. The Lupata range, seen run-

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ning parallel with the coast, forms the eastern crest of the table-land. Between 3° and 4° s. lat., it reaches, in the snow-clad Kilimandjaro and Kenia, the height of 20,000 feet. The mountainous country of Abyssinia is the eastern prolongation of the plateau and its elevated crest; in the summit of Abba Yared, at the northern extremity, it rises to 15,000 feet. At the s., the hills of Cape Colony rise in stages from Table Mount to the summits of the Nieuwveld and Sneeuwberg, in the heart of the colony, which are estimated at 7,000–10,000 feet; the spaces between the ranges being shrubby *kloofs* or valleys, and broad elevated terraces or *kurroos*. From the elevated crest that runs parallel to the w. coast from Cape Colony to Valfish Bay, Mr. Galton describes the country as sloping slightly inwards, thus giving a cup or basin shaped appearance to the interior of the continent. Towards the n.w. the border of the table-land rises in the Cameroons to the height of 13,000 feet. Its northern boundary is not determined; but it is likely that the valley of the western branch of the Nile penetrates into it, dividing it into two portions, an eastern and a western. A mountain seen lying s. from Lake Tchad is supposed to be one of its northern outposts.

2. N. and n.w. of the great triangular table-land lies Sudan or Central Nigritia, under which name may be comprehended the countries watered by the Senegal, Gambia, and Niger, with the coast of Lower Guinea, and the basin of Lake Tchad. In the w. part of this section is a mountainous table-land of no great elevation, in which the rivers above named take their rise; the Kong Mountains, which run parallel to the Guinea coast, are a branch of this elevation. Eastward of the Niger the country is hilly, alternating with rich, often swampy plains. In the basin of Lake Tchad is a vast alluvial plain, one of the largest on the globe, and of great fertility.

3. Between Sudan and the cultivated tract which borders the Mediterranean, stretches the Sahara or Great Desert. It extends s. nearly to the Senegal, the northern bend of the Niger and Lake Tchad, northward to the Atlas range in Morocco and Algeria, and towards Egypt it reaches to the Mediterranean. Its average breadth from n. to s. is about 1,000 miles. Its length from the Atlantic to the valley of the Nile is 2,000. Over a great part of this region rain never falls, and everywhere it is rare; it is thus condemned to sterility. It consists partly of tracts of fine shifting sand, which frequent storms of wind raise into the air, so as often to overwhelm travellers. But the greater part of the surface consists of naked but firm soil, composed of indurated sand, sandstone, granite, and quartz-rocks, often rising into ridges or hills. The desolation is interrupted at intervals by patches, sometimes of considerable extent, covered with bushes and coarse grass, and often of great beauty and fertility. These *oases* or *wadies*, as they are called, which are occasioned by subterranean springs, are most numerous and fertile in the eastern portion of the desert. The easiest route across the desert to Sudan runs from Tripoli through the kingdom of Fezzan to Lake

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Tchad. Fezzan receives periodic rain from the moist winds of the Mediterranean, which extend further into the continent here than elsewhere. The portion of the desert lying east of the route above described is called the Libyan Desert. It is chiefly in this region that the oases are susceptible of cultivation; the tracts of vegetation in the western portion are fit for little else than pasture, mainly for goats and sheep. The principal production of the more fertile oases is dates, though other fruits and grain are cultivated. Gum arabic is another production. Some of the larger oases support thousands of inhabitants living in villages. Commerce is carried on across the desert by various routes by means of caravans, consisting of from 500 to 2,000 camels, with their attendants. The distance between the wells sometimes exceeds ten days' journey; and when a well is found dry, men and animals are in danger of perishing. The inhabitants consist of independent tribes of Moors, Berbers and Arabs.

4. The Atlas region, comprehending the mountainous countries of Marocco, Algeria, and Tunis. The northern slope towards the Mediterranean, called the Tell, is, in aspect, climate, and productions, similar to the opposite coast of Europe; the southern side merges gradually into the Sahara. Some parts of the chain are considerably above the snow-line, and the highest summits may reach 13,000 feet.

5. The region bordering on the Red Sea, consisting of Abyssinia, Nubia, and Egypt. Abyssinia is the mountainous termination of the great southern plateau. Between this and the Mediterranean extends the low valley of the Nile, separated from the Red Sea on the east by a rugged mountainous region, and from the Libyan Desert on the west by a low ridge of limestone and sandstone.

Regarding the hydrography of A., much is still to be ascertained. Livingstone's discoveries have shown that the portion which, until recently, was termed the 'unexplored territory,' is anything but the barren and riverless desert that we imagined. But as hardly one of its streams has been traced throughout its entire course, while nearly the entire tributaries of these are very imperfectly known, we must wait for the result of further explorations, before positive statements can safely be made. Those of the s., which mostly rise in the neighboring highlands, are, in many instances, little better than mountain torrents, having short and rapid courses; and the embouchure, generally in the delta form, is commonly obstructed by a bar of sand. The Orange River, for instance, is filled with sand at its mouth.

Rivers.—The great rivers of A. are the Nile, the Niger, the Zambesi, the Orange, the Congo, the Senegal, and the Gambia. See NILE, NIGER, etc. The first of these is formed by the junction of two rivers—the White Nile (Bahr-el-Abiad) and the Blue Nile (Bahr-el-Asrak). The former has its sources in the great equatorial lakes, including those called the Victoria Nyanza and the Albert Nyanza, skirts the eastern edge of Kordofan, and passes into Nubia, where it is joined by the Blue Nile at Khartum, after the latter has broken through the highlands of Abyssinia. The single

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stream then sweeps circuitously through Nubia in a succession of cataracts, and descending into Egypt, reaches the Mediterranean through the far-famed Delta. The second of the great rivers, the Niger, Joliba, or Quorra—for it goes by these and other names in different parts of its course—rises in the Kong Mountains of Guinea, about $9^{\circ} 25'$ n. lat., $9^{\circ} 45'$ w. long., and flows first n.e. till it reaches Timbuktú, where it bends e. for a short distance, then descends in a s.e. direction into the Gulf of Guinea. Its length is estimated at 2,500 miles; and its navigability has been ascertained for a distance of upwards of 400 miles; but its banks are very pestilential. Its principal tributary is the Tchadda or Benué. At the extreme west of the mountains of Kong, and not far from the source of the Niger, rises the Senegal, which flows with a crescent sweep to the n.w. through Senegambia, and enters the Atlantic n. of Cape Verd. The Gambia, a smaller river, runs in a similar direction, and falls into the sea s. of Cape Verd. The Congo, proved by Stanley to be identical with the river called at various parts of its course the Chambezi, Luapula, Lualaba, etc., runs northward to a point about 2° north of the equator, and thence s.w. towards its embouchure in the Atlantic at Cape Padrone. Its whole course is about 2,900 miles. The Orange River flows w. with many windings to the sea, as do also the Kwanza (Coanza) and the Ogové or Ogobai (q.v.); while the Zambesi, rich in affluents, and the less-known Limpopo or Oori (q.v.) run in an easterly direction.

Lakes.—The lakes of A. are, as yet, no better known to us than its rivers. *Tchad*, *Chad*, or more correctly, according to Dr. Barth, *Tsad*, the chief lake of Sudan or Central A., has a circumference of about 200 miles, with a depth varying from 8–15 feet, and an elevation of 850 feet above the sea-level. Though it has no outlet, its waters are cool and clear, and abound with fish. Beside a multitude of temporary streams, it is the recipient of several large rivers. The chief is the Shary or Asu, from the s.e. *Dembea* or *Tzana*, in Abyssinia, through which the Blue Nile flows, is about 65 m. long, and 30 broad, and lies 6,000 ft. above the sea level. Lake N'gami, in s. A., the centre of the internal drainage of the country between the Orange and the Zambesi, is about 2,500 feet above the sea-level, 70 miles long, and 20 broad. N. of the Zambesi, between the parallels of 10° and 14° s., and about 350 miles inland from the coast of Mozambique, lies Lake Nyassa, at an elevation of 1,200 feet above the sea-level. The discoveries of Tanganyika and the Victoria Nyanza by Speke, and of the Albert Nyanza (q.v.) by Baker, have been already noticed, and described in their proper place. The source of the Nile lies in the basin of these last two lakes. W. of Victoria Nyanza, and apparently connected with it, lies the great Lake Muta Nzige; e. and n.e. of it are Naivasha, Baringo, and Samburu; Shirwa or Kilwa is s.e. of Nyassa; and Hikwa of Tanganyika. Bangweolo or Bemba, and Moero or Mwero, are in the course of the Luapula-Congo; Kassali and other lakes are in its basin.

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Geology.—The geology of A. is known as yet only from cursory observations at isolated points. The character of the Sahara has been already indicated. The section traversed by Dr. Livingstone presents a variety of schists, shales, sandstones, and tufa, through which protrude granite and trap rocks. In one place towards the east side of the continent the sandstone is found overlying coal. Between Tripoli and Murzuk there is a plateau, the dark sandstone of which disintegrated fills up the inequalities of the surface, from which the black rock stands out in fantastic cones. The lofty barrier of limestone which forms the western boundary of Egypt, reappears in the rugged ranges of hills which break the monotonous waste of Sahara; they sometimes contain marine shells. Secondary limestone also constitutes the lower skirts of the Atlas Mountains, but what constitutes their basis has not yet been discovered.

Climate.—There are three great varieties of climate, corresponding to the physical structure of the continent: first, that of the plateaus; second, that of the terraces which lead to them; and third, that of the coasts. In the vast desert of Sahara, extending over an area equal to that of the Mediterranean Sea, almost destitute of water and vegetation, and partly covered with tracts of sand and bare, low rocks, the heat of the day is uniformly contrasted with the coldness of the night; while the terrace-land of Limbu, for instance, situated behind the Sierra Leone region, has a temperate and wholesome climate; and in that rising behind the Slave Coast are beautiful landscapes, abundant springs, new forms of vegetation, and a mild Italian air. The natives of Congo call their terrace-lands, which are well cultivated and thickly peopled, 'the paradise of the world.' But the flat coasts, which are often overflowed in the rainy season, have a very oppressive atmosphere, and from the morasses at the mouths of the rivers a malaria arises which is pestilential to Europeans. This malaria has been supposed to arise from the decay of the vegetable matter brought down by the rivers from the dense mangrove-woods, which, mixing with the salt water on the coast, produces sulphuretted hydrogen gas. The region of pestilential air has been calculated to extend about 100 miles inland; but only 40 miles out at sea, and to rise to a height of 400 feet above the sea-level.

Productions.—The *vegetation* of A. is decidedly less varied than that of Europe or Asia. Along the Mediterranean seaboard, it greatly resembles that of Southern Europe. The tropical regions are not as rich in species of plants as those of S. Amer., but still they exhibit many peculiar genera. As we leave the sultry coasts, and ascend the terraces towards the interior we pass gradually from tropical productions to those of the temperate zones, which all flourish well in several parts of A. Though the forests cannot rival those of Brazil, they are rich in valuable woods, especially the harder kinds; some of them excellent for shipbuilding. Here are the gigantic *Adansonia* (q.v.) *digitata* or baobab. Ebony, certain kinds of rosewood, and the timber called African teak, are among the productions of the tropical forests. The butter-tree (*Bassia*, q.v.) is one of

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the most remarkable productions of the central regions. Extensive level tracts are covered with acacias. Certain palms are very characteristic of different parts of A., and are of the greatest importance to the inhabitants, particularly the date-palm (q.v.) in the north, and in an inferior degree, the doom-palm (q.v.), both of them growing in regions comparatively arid, and often surrounded by the very sands of the desert; while the oil-palm (q.v.) flourishes amid the tropical luxuriance of the west, and supplies an article of commerce which now attracts the ships of Europe, in constantly-increasing numbers to shores formerly frequented only for the prosecution of the slave-trade. The cocoa-nut palm (q.v.) flourishes on many parts of the tropical coasts. A large quantity of oil is produced also by a plant of a very different description, the ground-nut (*Arachis*, q.v.), a leguminous herbaceous plant, which has the remarkable peculiarity of thrusting its pods into the ground to ripen there, and which is now so extensively cultivated, that 9,000,000 bushels of ground-nuts are annually exported from the Gambia. The southern extremity of A. is remarkable for the vast number of its species of mesembryanthemums and heaths. Pelargoniums, iridaceæ and proteaceæ, are also among the most characteristic features of its vegetation. Euphorbiaceæ abound in most parts of the continent. Many of the productions of other countries have been introduced, both in the tropical and temperate parts of A. Maize is now extensively cultivated, as well as rice, wheat, and millet. A peculiar kind of grain, called fundi, or fundungi (*Paspalum exile*), is cultivated in the w., and grains called teff and tocusso (*Poa Abyssinica* and *Eleusine Tocusso*) in Abyssinia. Coffee grows luxuriantly, and of good quality. Indigo and tobacco are easily cultivated, and cotton has succeeded well where it has been introduced, as in Egypt, where, however, it requires artificial and laborious irrigation; while in the rich and well-watered soil of Senaar, it flourishes even with a most careless style of cultivation, and might, without doubt, be produced in enormous quantity. Other regions, as Natal, seem likely soon to produce it abundantly. The vine is cultivated with success at the Cape of Good Hope, and the sugar-cane in different parts of the continent.

In the *animal kingdom*, are the lion, the leopard—often called the tiger, but the tiger is not yet known except as a native of Asia and the Asiatic isles—hyenas, jackals, and others of the canine family, a species of elephant, differing in some particulars from that of Asia, several species of rhinoceros, the hippopotamus, wart-hogs (*Phascolæus*), and many kinds of monkeys, particularly within the tropics. The giraffe, the zebra, and the quagga, are peculiar and characteristic, as are also numerous species of antelope, which occupy, in African zoology, the place of deer in other parts of the world. The gnu is one of the most remarkable of the antelope genus. Some of the smaller species occasionally appear in prodigious numbers, devastating the fields of the colonists. The ostrich is found in almost all parts of A. Parrots, flamingoes, and guinea-

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fowls are among the birds. Crocodiles are found in the rivers, and many kinds of lizards and serpents occur, not a few of the latter being poisonous. There are also tortoises and turtles of different species. The domestic animals thrive. Camels, said to have been introduced by the Arabs, are plentiful in the north.

In the department of *mineral* wealth, the diamonds found in Griqualand West (q.v.) have in recent years surpassed every other produce in value. Diamonds to the value of over £3,000,000 passed through the Kimberley post-office in 1880. Gold is found abundantly in the sands of the great rivers that flow out from the central region, on the coast of Guinea, and also in the s.e. of A. The Sierra Leone coast has valuable iron ore, which is also found in the Upper Senegal, the region of Timbaktu, the Congo chain of mountains, Egypt, and Darfur. Copper is plentiful at Majomba, and in some other places; salt may be obtained from almost every district in A. except Sudan, and sal-ammoniac, saltpetre, sulphur, and emery in various portions of the continent.

Population.—The population is vaguely estimated at about 205,000,000. Keane arranges the races of Africa in seven great groups, according to language: 1st, the Semitic family, along the n. coast and in Abyssinia; 2d, the Hamitic family, mainly in the Sahara, Egypt, Galla Land, and Somali Land; 3d, the Fulah and Nuba groups, in Western, Central, and Eastern Sudan; 4th, the Negro group, in Western and Central Sudan, Upper Guinea, and the Upper Nile regions; 5th, the Bantu family, everywhere south of about 6° n. lat., except in the Hottentot domain; 6th, the Hottentot group, in the extreme s.w. corner from the Tropic of Capricorn to the Cape; 7th, the Malayo-Polynesian family, in Madagascar. Latham's divisions were six: 1st, *The Negro Atlantidæ*.—These have, in an exaggerated form, the black unctuous skin, woolly hair, projecting jaws, flat nose, and thick lips, characteristic of the whole variety. They occupy Western A., from the Senegal to the Gaboon, Sudan in the centre, and the low parts of the Upper Nile. The dusky or brown hue is more prevalent in A. than the jet-black of the negro. 2d, *Kafir Atlantidæ*.—In physical conformation, they are modified negro; their language has some singular peculiarities. They occupy from north of the equator to south of the Tropic of Capricorn. 3d, *Hottentot Atlantidæ*.—Their color is brown rather than black; the hair grows in tufts. The stature is low. Their language has a characteristic *click*. 4th, *Nilotic Atlantidæ*, occupying the water-system of the Upper and Middle Nile. The leading tribes are the Gallas, Agows, Nubians, and Bishari, forming the population of Abyssinia, Adel, and Nubia. It connects by imperceptible gradations the Coptic and Semitic groups with the rest of the African languages. 5th, *Amazigh Atlantidæ*, usually called Berbers. In conformation, they vary from the negro to the Arab type. The language is *sub-Semitic*. They inhabit the ranges of the Atlas, the Sahara, the Canary Isles, and are found as far s. even as the centre of Sudan. 6th, *Egyptian Atlantidæ*,

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or old Egyptians, represented by the modern Copts. Both language and physical conformation connect them, on the one hand, with Berbers and Nubians; on the other, with the Assyrians, Jews, etc.

In *religion*, the natives are as various as in language: though it has been questioned whether some of the tribes, especially in s. A., can be described as having any religion. In not a few of these, the religious consciousness seems extinguished, and the very terms which express it, to have dropped out of their language. Such, at least, was the result of Moffat's observations, though perhaps the degradation in which he found some tribes plunged was in itself a barrier to a just and adequate communication with them; for the lower that races or ranks sink, the less easy it is to understand them. Throughout the north, and to a considerable extent in the interior, the creed of Mohammed is received, but held very loosely by many. The Moham-medan tribes on the w. coast divide themselves into two classes—the *Marabouts* and the *Sonnachees*; but it is not easy to understand the exact nature of this distinction, beyond the simple fact that the Marabouts profess to adhere rather strictly to the laws of the Prophet, while the Sonnachees are more secular, make little profession of sanctity, but eat pork and will drink spirituous liquors. The lowest form of superstition, styled *fetichism*, prevails among the uncultured negro tribes, as well as among the Gallas, a nation widely spread s.e. of Abyssinia; and the practice of offering human sacrifices is found in many tribes. The Abyssinians hold by tradition a crude form of Christianity.

By way of interior *commerce* or barter, caravans of camels pass over the wide deserts of the north by such routes as lead them to the greatest number of springs, brooks and *oases*, or comparatively fertile places. Timbuktu is the chief commercial depôt for the caravans from Tafillet, Tripoli, and other places in n. A., and is connected by other caravan routes with Bornu, the Soudan, and Dahomey, as also, it may be, with the east coast. The principal places of commerce in the east are Berbera, Ankobar, Gondar, Sennaar and Kobbe. In Benguela and Angola, negro caravans from the interior arrive at the chief places on the coast, bringing slaves, ivory and gold-dust, and the plateau of the Upper Nile is visited by Arab traders from Zanzibar engaged in the same traffic. Though A. is so rich in natural productions, it is still a painful fact that along its coasts, and in the caravan roads of the interior, the principal trade is in slaves. The African is fit for something better. Even in the purely native states there is, of course, great variety of social condition and aptitude for civilization; but even many of the rudest tribes are in a condition which cannot be fairly described as savagism. They have fixed dwellings, though these are merely mud-huts, defended by stockades. Among several tribes the native merchant is highly respected, and his goods are safe even in times of feud or warfare. The land is cultivated; the natives wear dyed cotton dresses. Gold and iron are manu-

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factured with ingenuity. All that is wanted is a free commercial intercourse with the civilized world.

Something has of late been attempted in the Egyptian dominions and in Zanzibar towards putting an end to the odious traffic in human souls and bodies; but special interest attaches to the work done by the International African Association in the basin of Congo, and to the proceedings of the conference of the powers at Berlin in the end of 1884. The association was founded after the return of Mr. Stanley from his remarkable expedition along the Congo (q.v.) in 1874-77, and was the result of his reports as to the admirable field for commerce and civilizing influences presented by the vast basin of that river. The king of the Belgians became president; and under Mr. Stanley's management, the association had by 1884 founded some 30 trading stations on the Congo, both above and below Stanley Pool. In the end of 1884, Prince Bismarck summoned a conference to Berlin to discuss the standing of the association and the regulation of trade on the Congo and Niger; and thirteen of the European powers, with the United States, sent representatives to take part in the conference. After protracted deliberations, they agreed to sanction and maintain perfect freedom to the trade of all nations on the Niger and on the Congo. In the case of the Niger, a French protectorate was recognized in its upper course, and a British protectorate on the lower Niger. The Congo basin is under no civilized power other than the association, whose flag is recognized by some of the most important nations, including the United States, Germany, and Britain. It is to constitute a kind of state, with a governor (*chef d'état*) and three sub-governors. Not merely the enormous basin of the Congo and its tributaries is thus thrown open to free trade, but also a portion of the Atlantic seaboard 380 miles long, lying n. and s. of the mouth of the Congo, and called the 'Commercial delta' of the river; and the vast region lying between the Congo basin and the coast strip of the Indian Ocean occupied by Portugal and Zanzibar from the fifth degree of N. latitude to the mouth of the Zambesi. To this latter territory, which includes the great lakes Victoria Nyanza, Albert Nyanza, Tanganyika, Nyassa, and others, free access from the sea is secured by the lower courses of seven rivers, including the Zambesi and its tributary the Shire. The true basin of the Congo is itself of very great extent, apart from this further extension of the area of free trade. The Congo, from its source in the Chibalè Range s.s.e. of Tanganyika to its mouth, has a course of 2,900 miles; and receives the waters of several great lakes (including Tanganyika when in flood) and of numerous large tributaries (Kwango, Ikelemba, Sankuru, Ukere, Aruwimi). It seems to carry to the sea by its single mouth (seven miles wide) a greater volume of water than any other river but the Amazon. The lower 110 miles are freely navigable; from Yellala Falls to the spacious Stanley Pool, 235 miles of its course are interrupted by rapids; but between Stanley Pool and Stanley Falls (at the Equator) is a vast extent of navigable waterway on the main stream and

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the affluents. The basin, which Stanley holds to have once been mainly the bottom of an inland sea, is estimated to have an area of 1,300,000 square miles, with a pop. of 40,000,000. The association proposes to open the area to commerce by making a railway from Stanley Pool at the lower end of internal navigation to the Atlantic coast.

The region of the great lakes, comprehended within the scope of the association's powers, has recently been the scene of exploratory and missionary efforts. Much hitherto unvisited territory was made known by Mr. Joseph Thomson's successful journey in 1883-4 from the e. coast through the Massai country by Kilimanjaro, Kenia, the Aberdare Range (14,000 feet), and lakes Naivasha and Baringo to the shores of the Victoria Nyanza. In 1884, Mr. H. H. Johnston spent six months on the slopes of Kilimanjaro, camping as high as 11,000 feet, and explored the natural history of the great mountain.

The principal native states in Africa are Abyssinia, Morocco, Zanzibar, Ashanti, Dahomey, Bornu, and the Soudan states (some of them lately Egyptian). Egypt is semi-independent; Tripoli is Turkish; Liberia (q. v.) is a civilized negro state. The Orange Free State is a republic of Boers; the Transvaal is under British suzerainty.

British possessions are—Cape Colony and Natal, with dependencies such as Bechuanaland, including Stellaland and Goshen; Walvisch Bay; the island of Mauritius, St. Helena, Ascension, Sierra Leone, Cape Coast, and the Gambia Colony. The French have settlements on the Senegal, the Upper Niger, the Ogowé, the Kwilu and Congo, Obokh (on the Red Sea), Algeria, and Tunis, with the islands Bourbon, St. Marie, Mayotte, and doubtful or at least indefinite protectorate over Madagascar. The Portuguese have the Azores and Cape Verd Islands, with Madeira, St. Thomas, Angola, and Mozambique. The Canary Islands, Fernando Po, and Annobon belong to Spain. Italy has the station Assab on the Red Sea; Germany has several stations on the Gulf of Guinea in Bay Beach, Bagidah, etc.; and in 1884 greatly increased her possessions in Africa, acquiring the Cameroons district and Angra Pequena, and extended her protectorate over the w. coast from Cape Frio, at the south end of the Portuguese territory to the Orange River, omitting only Walvisch Bay as being already British.

See the states, mountains, rivers, and peoples of Africa discussed under their several heads; also the articles on the more distinguished African travellers.

AFRICAN, a. *ăf-rî-kăn*, also **AFRIC**, a. *ăf-rîk*, pertaining to Africa: **N.** a native of Africa. **AFRICANDERS**, n. plu. *ăf-rî-kăn'dêrz*, persons born in Africa, but not aborigines.

AFRICAN INTERNATIONAL ASSOCIATION: see **Congo**.

AFRICAN METHODIST EPISCOPAL CHURCH: a Christian denomination composed of colored people in the United States and Canada. The early Methodists worked zealously among the Africans in the United States, both

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slave and free, and multitudes of them became **Methodists**, whites and blacks worshipping in the same churches, though separated. Thousands still are in the **Methodist Episcopal Church**, which, however, at its general conference, 1864, organized two new conferences consisting entirely of colored members. As early as 1816, a number of colored Methodists called a conference in Philadelphia, and in April of that year organized the **African Methodist Episcopal Church**, Rev. Richard Allen being the first bishop; he was ordained by five presbyters. In 1858, this church had eight conferences—in Baltimore, Philadelphia, New York, Ohio, Indiana, New England, and Mississippi. In 1856, the **Canada Conference** was organized as a separate body. The civil war in 1861, and the destruction of slavery, greatly enlarged the territory of this church, and added to its membership. In May, 1864, the conferences of this church and the **M. E. and African M. E. Zion Church** were held simultaneously in Philadelphia, and the conferences sent deputations to each other. A joint committee also was appointed by the **African M. E. Church** and the **African M. E. Zion Church**, to frame a plan of union of the two bodies. Twenty-five delegates from each church met at Philadelphia, 1864, June 14, to consult upon terms of union. Arrangements were made harmoniously to this end, but were never carried into effect. The doctrines of the **African M. E. Church** are the same as those of the **M. E. Church**. The bishops preside over the conferences, and station the ministers; they are styled **Rt. Rev.** The general conference is composed of travelling ministers of two years' standing, and local preachers specially delegated by the annual conference. The sessions are quadrennial. In 1876 there were 27 conferences and 212,000 members; in 1885, 1,882 ministers and 391,044 members.

AFRICAN METHODIST EPISCOPAL ZION CHURCH. This church originated in 1820, through the secession of the Zion congregation of African Methodists in the city of New York, from the **M. E. Church**, because of disagreement as to church government. Zion was soon joined by other congregations, and in 1821 its first conference was held in New York, there being present 22 ministers, representing 1,426 members. In 1847, the number of members had increased to 5,000. In 1864, the General Conference, at the meeting in Philadelphia, declared in favor of a union with the **African M. E. Church**, but this union was not consummated. In 1876, there were 7 bishops, 17 annual conferences, 1,200 travelling ministers, 1,063 local preachers, 1,154 exhorters, 225,000 members, 25,321 probationers, 9,083 churches, 15,094 Sabbath-schools, 25,000 officers and teachers, 102,474 scholars. In 1885, the number of ministers was 2,000, and the number of members 300,000.

AFRIT, n. *āf-rīt'*, or **AFRITE'**, n. *-rīt'* [*Ar. ʿifrīt'*]: in the Mohammedan *myth.*, an evil spirit or genius; anything frightful or horrible.

AFRONT, ad. *ā-frūnt'* (see **AFFRONT**): in *OE.*, in front; face to face.

AFT—AGAIN.

AFT, a. or ad. *äft* [Icel. *aptr*, *aftr*, or *aftan*, backwards; *aftr*, back: an abbreviation of **AFTER**, which see and *Note*]: a term used by seamen to mean the stern of the ship, or to point to what lies in the direction of the stern; behind; astern; abaft. **FORE AND AFT**, the whole length of the ship; from end to end of a ship.

AFTER, a. *äftér* [AS. *æft* or *after*, afterwards, again: Dan. *efter*, behind: Goth. *aftra*, again, backwards: Icel. *aftan*, behind]: later in time—as, it is an *after* thought: **PREP.** behind; later—as, he went home *after* dinner: **CONJ.** when—as, you will come to me *after* he has seen you—but *after* here is a prep. if 'time' be understood. **AFTER-ACT**, an act following. **AFTER-AGES**, succeeding times; posterity. **AFTER ALL**, when all has been said, weighed, or done; in conclusion; upon the whole. **AFTER-BIRTH**, n. that which comes away after delivery; the placenta. **AFTER-COST**, n. additional expenses incurred after the original estimate has been exhausted. **AFTER-CROP**, a second crop in the same year. **AFTER-DAMP**, the choke-damp or carbonic acid occurring in coal-mines after an explosion of fire-damp. **AFTEREYE**, in *OE.*, to follow and keep in view. **AFTER-GUARD**, in a *ship*, the seamen stationed on the poop to attend to the after-sails. **AFTER-HOURS**, hours following business. **AFTER-LIFE**, the later or future life. **AFTERMATH**, n. *äftér-máth* [*after*, and *math*, derived from *mow*]: a second crop of grass in the same season; eddish. **AFTERMOST**, a. [AS. *æftemest*; Goth. *aftumists*, the last]: hindmost; nearest the stern of a ship. **AFTERNOON**, n. *äftér-nôn*, the part of the day after 12 o'clock. **AFTERPAINS**, n. plu. *-pānz*, those following child-birth. **AFTER-PIECE**, a piece performed after the chief play. **AFTER-SAILS**, the sails on the mizzen-mast and stays. **AFTER-STATE**, the future life. **AFTER-THOUGHT**, reflections after an act; later thoughts. *Note*.—**AFTER** is shortened into *aft*, and is not a comparative of *aft*, but an older word; *after* is a comparative form, and stands for *of-ter*, meaning 'more off,' 'further away.'

AFTERWARD or **AFTERWARDS**, ad. *äftér-wārdz* [AS. *æfter*, behind; *weard*, direction]: later in time. **AFTER-WISE**, those who are wise after an event has happened.

AGA, n. *ā'gā* [Turkish, *agha*]: in Turkey, a military commander or chief officer.

AGADES, *āg'ā-dēz'*: formerly a very important city of Central Africa, but at present in a declining condition. It is the capital of Aïr or Asben (q. v.), and is built upon the eastern edge of a great table-land, at an elevation of not less than 2,500 feet, in lat. 16° 33' N., long. 7° 30' E. At one time A. was an entrepôt for the vast traffic carried on with Gogo, the ancient capital of the Songhay (q. v.) empire; and in the 16th c., it probably contained 60,000 inhabitants. At the time of Dr. Barth's visit it had not more than 6,000 or 7,000. There is a large admixture of Berber blood in the people of A.

AGAIN, ad. *ā-gēn'* [AS. *ongean* or *agen*, opposite: Sw. *gen* or *igen*; Bret. *gin*, opposite, again]: once more; a second time; back; besides; at another time; at a proper

AGALACTIA—AGAMEMNON.

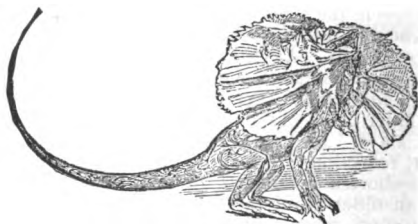
and suitable time. **AGAINST**, prep. *ă-gĕnst'*, in opposition to; facing; contrary to; in expectation of. **AGAIN AND AGAIN**, often; frequently repeated.

AGALACTIA, *ă-gă-lăk'ti-ă*: [Gr. *a*, not, and *galacté*, milk]: a lack of the due secretion of milk. It may depend either on organic imperfection of the mammary gland, or upon constitutional causes. In the latter case, the secretion may often be excited by warmth and moisture, by the stimulus of the act of sucking, and if this fail, by the application of the leaves of the castor-oil plant to the breast.

AGALLOCHUM: see **ALOES WOOD**.

AGALMATOLITE, n. *ăg'ăl-măt'ô-lit* [Gr. *agalma*, an image; *lithos*, a stone]: a variety of clay-slate altered by heat, usually brought from China carved into grotesque figures and chimney ornaments.

AGAMA, *ăg'a-mă*: a genus of Saurian reptiles, the type of a family called *Agamidæ*; sometimes ranked in the acrodont sub-family of the *Iguanidæ*. The Agamas are allied to the Iguanas, and have a lax skin, which they have the power of inflating with air. The Iguanas are arboreal and American; the Agamas are of the Eastern hemisphere and terrestrial. None of them are of large size. The Common A. is found on the Guinea and Senegal coasts. The Egyptian A. (*A. Egyptiaca* or *Trapelus Egyptiacus*) is re-



Frilled Agama.

markable for changing color, like the chameleon. Some of the most common lizards of Australia are of this family. The Frilled A. (*chlamydosaurus*) is a remarkable Australian lizard, having a sort of frill around the neck, which usually lies back in plaits, but is raised when the animal is alarmed.

AGAMEMNON, *ăg'ă-mĕm'non*: son of king Atreus, and brother of Menelaus. After his father's death, he reigned in Mycenæ, and married Clytemnestra, by whom he had three children—Iphigenia, Electra, and Orestes, afterwards celebrated in the Greek drama. When Paris, son of the Trojan king, Priam, seduced and carried away Helena, the wife of Menelaus, A., with his injured brother, made a tour throughout Greece, exhorting all the leaders of the people to unite their forces in an expedition against Troy. Having gained their alliance, A. was appointed general-in-chief of the united forces assembled at Aulis in Bœotia, where they were delayed some time. In the following campaign against Troy, which forms the subject of Homer's

AGAMI—AGAPÆ.

Uliad, A. is described as a very stately and dignified character. After the fall of Troy, he returned home, taking with him Cassandra, the daughter of Priam. Shortly afterwards, he was murdered by Clytemnestra, aided by Ægisthus, in whose care he had left his wife and children. A tragical fate had always lowered over the house of A.; and the destinies of his children—Iphigenia, Electra, and Orestes—were the favorite subjects of the Greek drama.

AGAMI, *äg'ä-mē* (*Psophia*): a genus of south American



Agami.

birds, allied to cranes. Only two species are known. They are sometimes called *Trumpeters*, from a peculiar sound which they make. The best-known species is the Goldbreasted Trumpeter (*P. crepitans*), of the size of a large pheasant, but with much longer legs and neck, and a very short tail. It runs very quickly; so much so, that a tame one in England has been known

to keep up with hounds. It is capable of the most perfect domestication.

AGAMIC, a. *ä-gäm'ik* [Gr. *a*, without; *gämōs*, marriage]: applied to all forms of reproduction in which the sexes are not directly concerned. **AGAMOUS**, a. *äg'ä-mūs*, in bot., applied to plants without visible organs of fructification. **AGAMOGENESIS**, n. *äg'äm ö-jën'ë-sis* [Gr. *genesis*, beginning, generation]: asexual reproduction.

AGAPÆ, *äg'ä-pē*: love-feasts, or feasts of charity, celebrated by the early Christians, usually in connection with the Lord's Supper. The name is derived from the Greek word *agape*, which signifies love or charity. At these feasts, the rich Christians presented their poorer brethren in the faith with gifts, and all ate together, in token of their equality before God and their brotherly harmony. The meetings were opened and closed with prayer; and during the feast, spiritual songs were sung. At first, a bishop or presbyter presided, who read a portion of Scripture, proposed questions upon it, and received the various answers of the brethren. Afterwards, whatever information had been obtained regarding the churches, was read—such as the official letters of overseers, or private communications from eminent members; and thus a spirit of practical sympathy was fostered. Before the conclusion, money was collected for widows, orphans, the poor, prisoners, and those who had suffered shipwreck. Then the members embraced, and the feast was ended with a 'philanthropic prayer.' As early as the 2d c., the custom of celebrating the

AGAPE—AGAPEMONE.

A. and the Lord's Supper together had ceased, on account of the persecutions. Justin, when writing on the latter subject, does not speak of the former; but Ignatius, on the other hand, seems to regard them as identical. Generally, the feast of the A. preceded the celebration of the Lord's Supper. But during the period of the persecutions, when the Christians had often to hold divine service before dawn, the A. were, for the most part, delayed till the evening. Later, a formal separation was made between the two rites. In the 3d and 4th centuries, the A. had degenerated into a common banquet, where the deaths of relatives, and the anniversaries of the martyrs, were commemorated, and where the clergy and the poor were guests; but with the increase of wealth, and the decay of religious earnestness and purity in the church, these A. became occasions of great riotousness and debauchery. Councils declared against them, forbade the clergy to take any share in their celebration, and finally banished them from the church. At the same time, it must be admitted that the heathens ignorantly calumniated the practices of the Christians in these A., and that the defenses made by Tertullian, Minucius, Felix, Origen, etc., are successful. The Moravians have attempted to revive these A., and hold solemn festivals, with prayer and praise, where tea is drunk, and wheaten bread, called Love-bread, is used.

AGAPE, ad. *ă-găp'* [AS. *a*, on, and *gape*]: gaping as with wonder.

AGAPEMONE, n. *ăg'ă-pēm'ô-nē* [Gr. *agăpē*, brotherly love, affection]: a so-called religious association of men and women retired from the world, living in common, ostensibly as brothers and sisters. Such a conventual establishment, consisting of persons of both sexes, was founded at Charlynch, near Bridgewater, in the county of Somerset, England, by Henry James Prince, formerly a clergyman of the Church of England. The inmates belong to a new religious sect originating with Mr. Prince and a Mr. Starkey, also a clergyman, and are sometimes called Lampeter Brethren, from the place where Prince was educated, and where, while a student, he formed a revival society. The adherents of the sect generally, of whom there are many in the s.w. counties of England, are known as Princeites or Starkeyites. Prince was b. Bath, 1811; was a student at Lampeter; on leaving college became curate of Charlynch. Here he preached strange doctrines, and converted his rector, the Rev. Samuel Starkey, to his theories. Both these men came under censure from their ecclesiastical superiors, and soon left the Church of England, and became vigorous propagators of a new sect with various fanatical theories, prominent among which was Prince's claim to sinless perfection, and to a commission from God to conclude the day of grace and introduce the day of judgment. Community of goods was strenuously insisted on. People of all classes flocked to hear the new preachers; even clergymen's families were infected with the taint of this heresy, which spread through the secluded villages on the coast, obtaining especial hold among the farmers, several of whom, as in the times of the

AGAPEMONE.

apostles, brought their wealth, and laid it at 'Brother Prince's' feet; thus funds accumulated rapidly. Three of the Brothers—Prince, Thomas, and Cobbe (brother of Miss Frances P. Cobbe, a well known writer on social topics)—married three sisters, handsome and accomplished women of independent fortune, daughters of a wealthy widow named Nottidge. A fourth sister followed their example; they rejected the remonstrances of their aged mother, and replied that the devil was speaking to them by her voice. Their money was used by Prince to purchase a fine property at Spaxton, near Charlynych, where the Brethren and Sisters have lived since 1859, and which is luxuriously fitted up, the church serving also as a parlor, a music-hall, and a billiard room. In the course of the law proceedings, 1850, on the occasion of one of these women becoming dissatisfied, and being expelled from the society, much that was offensive in the conduct of the Agapemonians transpired. Although the inmates were married couples, it appeared that they entertained religious objection to the increase of population, as if believing that the perfection of all things will be the extinction of the human race.

Letters intended for Mr. Prince pass through the post-office directed to 'The Lord,' and his followers have been heard to say that he is their 'creator.' In 1851, Mr. Prince took up a party of them to London to see the Great Exhibition. He drove about town and in the parks in a carriage, constantly attended by out-riders, bareheaded, because they were in the presence of 'the Lord.'

Mr. Prince has put forth many pamphlets, some in the highest degree objectionable; others, in which the tenets of the Christian religion are mingled with his own peculiar doctrines. Christ came to redeem the soul. Prince affirms that *his* errand is to redeem the body. It is claimed by him that pain and grief, sorrow and sickness, have forever lost their dominion over the Princeites; yet it appears that consumption, rheumatism, and other infirmities of human nature do affect them, and that they die and are buried like other men.

In 1859 appeared *Brother Prince's Journal, an Account of the Destruction of the Works of the Devil in the Human Soul by the Lord Jesus Christ through the Gospel*. Brother Prince at the close of his journal deliberately states that he considers himself perfect and incapable of further improvement. These are his words: 'Having neither wishes nor desires, my will can have no disposition whatever to move in any one direction rather than another, but like the finely-poised beam of a well-adjusted balance, it hangs delicately suspended on the divine will, in a holy equilibrium of inward passiveness.' The 'residents of the Agapemone' still continue to exist as a community, preaching 'every Sunday and Wednesday,' but do not increase in numbers. Guide-books of the district recommend a drive through the beautiful property of the A. at Spaxton.

A society similar in its aims and character, though not conventual in its form, seems to have existed in England in the 16th and 17th centuries. It was called the 'Family of

AGARIC—AGASSIZ.

Love.' Its founder is generally supposed to have been Henry Nicholas, a native of Münster, in Westphalia, but who lived a considerable time in Holland. He held himself to be greater than Moses or Christ, for the former only taught men to *hope*, and the latter to *believe*, while he first announced the doctrine of *Love*. He made his appearance about 1540. Some investigators, however, are of opinion that the real father of this 'Family' was one David George, a fanatical Anabaptist of Delft, in Holland, who died 1556, and who imparted his 'damnable errors' to Nicholas, an old friend. In the reign of Edward VI., according to Fuller, Nicholas came over to England, and commenced the perversion of silly people in a secret way. By 1572 they had apparently increased in numbers considerably, for in that year one John Rogers published a work against them, entitled *The Displaying of an horrible Secte of Grosse and Wicked Heretiques, naming themselves the Family of Love, with the Lives of their Authors, and what Doctrine they teach in Corners*. In 1580, Queen Elizabeth issued a proclamation for the hunting out and punishing of 'the damnable sect.' The Family of Love, 'or Lust, rather,' as old Fuller has it, tried to insinuate themselves into the good graces of King James by presenting a petition casting aspersions on the Puritans. At length the society expired from continual exposure to ridicule in prose and verse, as well as from its own intrinsic worthlessness. Their doctrines seem to have been a species of pseudo-spiritual sentimentalism, resulting in gross impurity. See MUCKERS: PERFECTIONISTS.

AGARIC, n. *äg-är'ik* [Gr. *agarikon*, a certain fungus]: a genus of fungi: **ADJ.** pertaining to fungi. **AGARICS**, n. plu. the edible mushrooms of this country. **AGARIC MINERAL**, a soft variety of carbonate of lime, found in clefts of rocks, resembling a *fungus* in texture and color.

AGARIC and AGARICUS: see MUSHROOM.

AGASSIZ, *äg'ä-sē* or *ä-gas'iz*: LOUIS JOHN RODOLPH, one of the most distinguished of modern naturalists: 1807-73; b. Orbe, in the Canton de Vaud. After passing through the usual course of elementary learning at Biel and Lausanne, he studied at Zurich, Heidelberg, and Munich. The study of natural history had attracted him from early youth, and at Heidelberg and Munich comparative anatomy was his favorite occupation. In Munich he became acquainted with Martius and Spix, the well-known travellers in Brazil; and when Spix died, 1826, his collection of 116 species of fish collected in Brazil was left in the care of A., who published it under the title *Pisces, etc., quos collegit et pingendos curavit Spix, descripsit A.* (Munich 1829-1831, with 91 illustrations in lithography). Led by this work to study ichthyology more closely, A. undertook a systematic arrangement of the fresh-water fishes found in Central Europe. Of this work, the first fasciculus, containing the family of the Salmonidæ, appeared at Neuchâtel, 1839, with 34 illustrations, and descriptions in French, English, and German. A second fasciculus, prepared by his friend Vogt, *Embryologie des Salmones*, was published, 1840; and a third, *Anatomie*

AGATA DE GOTI—AGATE.

des Salmones, appeared, 1845, as a part of the third vol. of the *Memoirs of the Neuchâtel Society of Natural History*. Beyond this, the work was not continued. A. at the same time gave attention to the fossil remains of fishes, and during his stay in Paris, 1831-2, examined several private and public fossil collections. The results of his studies were given in his work *Recherches sur les Poissons Fossiles*, Neuchâtel, with 311 lithographed illustrations, 1833-42. Meanwhile, he had been invited to the professorship of natural history at Neuchâtel; and here he found two active young friends, Desor and Vogt, by whose aid his work on fossil fishes was brought to a conclusion, 1842. During several visits to England, A. made himself well acquainted with the collections of fossils in that country; and, 1844, published a monograph on fossil fishes found in the old red sandstone of the Devonian system. His study of these remains led him to examine other fossils; and the results appeared in his works *Description des Echinodermes Fossiles de la Suisse*, and *Monographies d'Echinodermes Vivants et Fossiles*. In the latter work, Professor Valentin of Berne supplied the section on the 'Anatomy of the Sea-urchin.' A. turned his attention next to the mollusca, and produced his *Critical Studies on Fossil Mollusca*, soon followed by his *Memoirs on the Muscles in Living and Fossil Mollusca*. His work on *Glaciers* excited great interest, as it opened new views in geology. The results of further study were given in a second work on *The System of Glaciers; or, Researches on Glaciers* (Paris, 1847). In preparing this work, he was assisted by his friends Guyot and Desor. In 1846, A. came to the United States, and was appointed to a professorship in Harvard College, from which he was transferred, 1852, to the chair of comparative anatomy in Charleston; but this he resigned, 1854, and returned to Harvard. In *Outlines of Comparative Physiology*, A. upholds the doctrine of the successive creation of higher organized beings on the earth. *An Essay on Classification*, by A., was published (Lond., 1859); and a *Journey in Brazil* (1868). In 1868 he was appointed a non-resident professor and lecturer in Cornell University; and with Count Portalés was, in 1871, intrusted by the American government with dredging operations in the Gulf Stream. His last work was the establishment of a school of natural history on the island of Penikese. See *L. A., his Life and Correspondence*, by his daughter, Eliz. Cary A. (1885).

AGATA DE GOTI, SANTA, *sânt á'gá-tá de go'tê*: town of s. Italy, province of Benevento, 14 m. e. from Capua. It is on a hill of volcanic rock, surrounded by the Isclero, an affluent of the Volturno. It is an episcopal seat, and has a cathedral, seven other churches, and an abbey. Pop. 5,000.

AGATE, n. *äg'ät* [F. *agate*—from the river *Achâtès* in Sicily; or the Phœnician word *nakadt*, spotted]: a variegated variety of chalcedony quartz, the colors being arranged in clouds, spots, or bands; a tool used by gold-wire drawers and gilders. AGATINE, a. *äg'ä-tin*, of agate. AGATIZED, a. *äg'ä-tizd*, marked like an agate; converted into agate.

AGATE—AGAVE.

AGATE: a mineral composed of layers of quartz, generally of different varieties or colors, intimately joined together. The layers are often concentric, and in the section sometimes appear nearly circular or elliptical, sometimes angular. Chalcedony, amethyst, common quartz, jasper, flint, etc., occur as layers in A. It takes a fine polish, and is much used for ornamental purposes. It is common in amygdaloids. Many agates are found in Scotland, and are sold under the name of *Scotch Pebbles*.

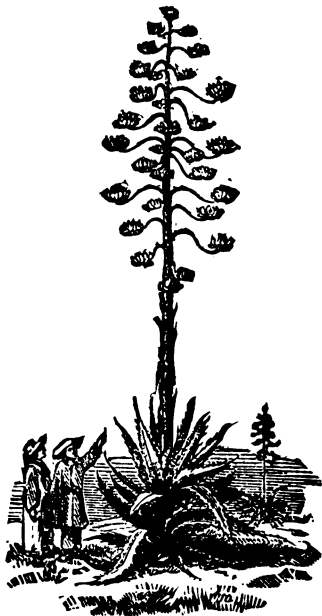
AGATHA, *ag'ăthă*, **SAINT:** a noble Sicilian lady of great beauty, who rejected the love of the Prefect Octavianus, and suffered a cruel martyrdom in the persecution of Christians under Decius (250). She holds a high rank among the saints of the Roman Catholic Church; her day falls Feb. 5.

AGATHOCLES, *a-găth'o-klēz*: one of the boldest but most unworthy adventurers of antiquity: B.C. 361-289; b. Thermae, Sicily. He rose from humble life through the patronage of Damas, a noble citizen of Syracuse, and received a command in the expedition against Agrigentum. Afterwards he married the widow of Damas, and became one of the most wealthy men in Syracuse. Under the rule of Sosistratus, he was forced to flee into Lower Italy, where he collected a band of partisans. Returning to Syracuse, after the death of Sosistratus, he gained the supremacy, confirmed it by a massacre of several thousands of respectable citizens, and took possession of the greater part of Sicily. To establish his power, and keep his army employed, he now attempted to expel the Carthaginians from Sicily; but in this undertaking he was defeated. His next plan was to pass over to Africa with a part of his army, and there attack the Carthaginians. This war he carried on with success for four years, until 307 B.C., when disturbances in Sicily compelled him to leave the army for a time. On his return to Africa, he found his troops in a state of mutiny against his son Archagathus, whom he had left in command, but pacified them by promises of large booty. Soon afterwards, he suffered a serious defeat, and with deliberate treachery, left his own son exposed to the vengeance of the disappointed soldiers. The son was put to death, and the troops surrendered themselves to the enemy, while A. escaped safely into Sicily, where, by fraud and cruelty, he soon recovered his former power, and was afterwards engaged in predatory inroads upon Italy. It was his intention to leave the throne to his youngest son A.; but his grandson, Archagathus, made an insurrection, slew the royal heirs, and persuaded Mænon, one of the favorites of the aged tyrant, to destroy him by means of a poisoned toothpick. A. had reigned 28 years.

AGAVE, n. *ag'āv* or *ăg'ăv-ē* [Gr. *ag'auos*, admirable: L. and Gr. *Agavē*, daughter of Cadmus, one of the Nereides]: a genus of plants belonging to the natural order *Amaryllidæ* (q.v.), and having a tubular perianth with 6-partite limb, and a triangular, many-seeded inferior capsule. They are herbaceous plants, of remarkable and beautiful appearance.

AGAVE.

There are a number of species, all natives of the warmer parts of America. By unscientific persons they are often confounded with Aloes (q.v.); and *A. Americana* is generally known by the name of AMERICAN ALOE. The agaves have either no proper stem, or a very short one, bearing at its summit a crowded head of large, fleshy leaves, which are spiny at the margin. From the midst of these shoots up the straight, upright scape, 24-36 feet high, and at the base often one foot in diameter, along which are small, appressed lanceolate bractæ, with a terminal panicle, often bearing as many as 4,000 flowers. In South America, these plants often flower in the eighth year, but in our hot-houses not until they have reached a very advanced age; whence arises the gardeners' fable of their flowering only once in one hundred years. After flowering, the plant always lies down to the ground, but the root, continuing to live, sends up new shoots. The best known species is *A. Americana*, which was first sent from South America to Europe, 1561, and being easily propagated by suckers, is employed for fences in Italian Switzerland, and has become naturalized in Naples, Sicily, and the n. of Africa. By maceration of the leaves, which are 5 to 7 feet long, are obtained coarse fibres, which are used in America, under the name of *maguey*, for the manufacture of thread, twine, ropes, hammocks, etc. This fibre is also known as Pita Flax. It is now produced to some extent in the s. of Europe. It is not very strong nor durable, and if exposed to moisture, it soon decays. The ancient Mexicans employed it for the preparation of a coarse kind of paper, and the Indians used it for oakum. The leaves, cut into slices, are used for feeding cattle. — Another species, *A. Mexicana*, is particularly described by Humboldt upon account of its utility. When the innermost leaves have been torn out, a juice continues to flow for a year or a year and a half, which, by inspissation, yields sugar; and which, when diluted with water, and subjected to four or five days' fermentation, becomes an agreeable but intoxicating drink, called *pulque*, to which the



American Aloe.

AGAZE—AGE.

Mexican Indians not unfrequently sacrifice both fortune and life. It is made likewise from *A. Americana*, and from several other species.—The roots of *A. saponaria* are used in Mexico for washing, being a powerful detergent, and forming a lather with salt water as well as with fresh. The juice of the leaves, made into cakes, is used for the same purpose.

AGAZE, *v.* *ă-găz'*, also AGAST, *v.* *ă-găst'* (see GAZE and AGHAST): in *OE.*, to strike with sudden fear; to fill with amazement. AGAZED, *pp.* *ă-găzd'*, struck with sudden fear.

AGDE, *ăgd.*: ancient French town in the dept. of Herault, founded by the Greeks; about a league from the Mediterranean Sea, on the left bank of a navigable stream. To the n., under the walls of the town, flows the Languedoc Canal. The mouth of the stream forms a harbor, which is entered by 400 vessels yearly. The coast trade of A. is very brisk, while it is also the entrepôt for the traffic of the s. and w. of France. It has, besides, considerable intercourse with Italy, Spain, and Africa. It carries on a large and prosperous trade in wines, oil, salt, corn, timber, wool, silk, and cloth; but the general aspect of the place is sombre and forbidding, on account of the black basalt of which the houses are built, whence it has popularly received the name of the Black Town. It has a naval academy, and is noted in history as the place at which Alaric, king of the Goths, convened a council. Pop. (1881) 7,767.

AGE, *n.* *ăj* [*F.* *âge*; *OF.* *aage*, and *edage*—from mid. L. *atâtem*, an age]: a period of time; the whole life of man, or any particular part of it; a particular period of time. AGED, *a.* *ă'jêd*, old, advanced in years: *N.* old persons—as the *aged*. A'GEDLY, *ad.* *-li*. AGEING or AGING, *a.* *ăj'ing*, growing older than youth; growing old; passing the prime of life. AGEDNESS, *n.* *ăj'êd-nêś*, the state or condition of being old.—*SYN.* of 'age': date; era; epoch; period; time; generation; ripeness; maturity.

AGE, in Law: the legal divisions of human life, being sometimes arbitrary, and sometimes founded on nature, differ considerably in different countries. The time when the law allows persons to do acts which, for want of years, they were prohibited from doing before. Males under the age of 14 years, are said not to be of discretion; at that age they may consent to marriage and choose a guardian. Twenty-one years is full age for all private purposes, and brings the right to vote for public officers, also making eligible to all offices unless otherwise provided for in the constitution. At 25 a man may be elected a representative in congress, at 30 a U. S. Senator, and at 35 he may be chosen president of the United States. He is liable to serve in the militia from 18 to 45, inclusive, unless exempted for some particular reason. As to females: at 12 they arrive at years of discretion, and may consent to marriage; at 14 they may choose a guardian; and 21 is full age, when they may receive all the rights which belong to their sex. In England, the whole period previous to 21

AGEE—AGEN.

years of A. is usually spoken of as *infancy*, a term which has a totally different signification in those countries that have followed the civil law. But notwithstanding this general division, common to both sexes, the ages of male and female are different for different purposes. 'A male at 12 years old, may take the oath of allegiance; at 14 is at years of discretion, and therefore may consent or disagree to marriage, may choose his guardian, may be an executor, although he cannot act until of age; and at 21 is at his own disposal, and may alienate and devise his lands, goods, and chattels. A female, also at 7 years of age, may be betrothed or given in marriage; at 14, is at years of legal discretion, and may choose a guardian; at 17 may be an executrix; and at 21, may dispose of herself and her lands. So that full A. in male or female is 21 years, which A. is completed on the day preceding the anniversary of a person's birth, who, till that time, is an infant, and so styled in law.'—(Kerr's *Blackstone*, vol. i. p. 493.)

By the law of Scotland, life is divided into three periods—*pupilarity*, *minority*, and *majority*. The first extends from birth to the age of legal puberty, which is 14 in males and 12 in females, at which ages they may respectively marry; the second embraces the period from the termination of pupilarity till the attainment of majority, at the age of 21 in both sexes; and the third includes the whole of after-life. The term minority, however, is often applied to the whole period anterior to majority, and is thus equivalent to infancy or nonage in England. In France, the marriageable A. is 18 years in males, and 15 in females (*Code Civile*, art. 144), an arrangement which seems more reasonable than that which we have borrowed from the Romans, and which, however suitable it may have been to the climate of Italy, could never have been free from inconveniences in this country. Twenty-one is generally the age at which men are eligible for public offices; and at this age they may elect, and be elected members of parliament. But a man must be 24 before he can be admitted to priests' orders and 30 before he can be a bishop. See INFANT: GUARDIAN: CONSENT: CONTRACT: CRIME: MARRIAGE, etc.

AGEE, ad. *ă-jē'* [*jee*, an exclamation to cause horses to move on one side: OE. *jee*, to move to one side]: turned to one side; awry; askew.

AGEN, *ă-zhăn'*: chief town of the dept. of Lot-et-Garonne in France, in a fertile region on the right bank of the Garonne. The town is old and gloomy in appearance, but has an active trade in woolen and linen fabrics, leather, colored paper, colors, cordage, and sail-cloth. It forms the connecting-link of the intercourse between Toulouse and Bordeaux, and exports plums, brandy, hemp, flax, and poultry. Close by it is the old-fashioned house in which Joseph Scaliger, the prince of scholiasts, was born. In ancient times A. was the scene of many a martyrdom of the Christians, when it was under the rule of Roman prætors. Afterward it suffered almost incredible miseries of war during

AGENCY—AGENT.

the barbaric irruption from Germany, having been taken and plundered by Goths, Vandals, and Huns, in turn. Next it came under the thralldom of the English, in their early French wars, and later was twice taken by the Huguenots, in the religious contests of the 16th c. Pop. (1881) 18,743.

AGENCY, n. *ā'jèn-sǐ* [F. *agence*—from mid. L. *agentia*, the power of doing—from L. *agens* or *agen'tem*, acting, doing (see **ACT**)]: the exerting of power; action; the business or office of an agent. **AGENT**, n. *ā'jènt*, the person or thing that exerts power; one intrusted with the business of another.—**SYN.** of 'agency': operation; performance; act; action; instrumentality; management;—of 'agent': factor; broker; substitute; deputy.

AGENDA, n. *ā-jèn'dā* [L. things to be done—from *agō*, I move, I lead, I do]: transactions; things done and recorded.

AGENT: one who is authorized or delegated to transact business for another (who in this relation is called his principal or constituent) in whose place he comes, and who is bound by his acts in the business to which the agency extends. The appointment of an A. may either be *general*, having reference to all the principal's affairs, or *special*, concerning some particular object. It may further be *limited* by instructions as to the conduct he is to pursue, or *unlimited*, in which case his conduct is left to his own discretion. Even in the last case, however, the A. is not freed from all responsibility for his conduct; he is bound to do his best for his employer, and he ought not to accept or retain the agency unless competent to its performance. See **PRINCIPAL AND AGENT**; also **FACTOR**; **BROKER**; **COMMISSIONER**; **COMMISSION-MERCHANT OR AGENT**.

AGENT AND CLIENT: The employer of a law-agent is entitled to presume that he is possessed of competent professional knowledge, and the A. is consequently responsible to his C. for the consequence of gross professional ignorance, or flagrant negligence in the conduct of the business intrusted to him. It is not enough to entitle the C. to damages that the A.'s proceedings have not had the effect which was expected, or which he himself predicted from them. It has been observed in the House of Lords, that it is of the very essence of an action against a professional man by his employer, that there shall be *gross ignorance* (*Purves v. Landell*, 4 Bell, 46). See **ATTORNEYS AND SOLICITORS**; **WRITER TO THE SIGNET**.

AGENT, ARMY: a person authorized by the government to manage the monetary affairs of regiments in the army, as a kind of military banker. At present in Britain, where this office has had a long history, the duties of such agents are limited to the following: applying monthly to the War-office for the money required for each regiment; receiving that money; applying part of it to the payment of officers; disbursing the regimental paymasters' bills for the cost of the expenditure; paying soldiers' remittances for the benefit of their families; settling the effects and credits of soldiers. Many experienced government officers have recommended

AGENT—AGES.

the abandonment of the system, and the paying of all moneys by the War-office direct, as a measure of simplification and economy.

AGENT, NAVY: a banker and attorney for naval officers, who bears some such relation to Admiralty expenditure as the Army A. (q.v.) to War-office expenditure. By the Act 27 and 28 Vict. c. 24 (1865), each of Her Majesty's ships of war, while in commission, has an agent appointed by the commander, and registered. His duties are to act for the ship in cases of salvage, merchant shipping law, distribution of prize-money, capture of slave-ships, etc. He receives two and a half per cent as payment in full of his services. The *Navy List* for 1885 contains the names of a dozen firms of navy and prize agents.

AGERATUM, n. *ă-jěr'ă-tŭm* [Gr. *a*, without; *gêras*, old age]: a genus of composite plants, one of the species *A. mexicanum*, being a well-known occupant of the flower-border, with densely clustered lavender-blue capitules—genus so named because its flowers continue for a long time.

AGES: designating the epochs of civilization in the history of the human race. The old poets and philosophers described these in harmony with what they conceived to have been the moral and political condition of their ancestors. The idea of a succession of A. presented itself at a very early period to the Greek mind. The life of the race was likened to that of the individual—hence the infancy of the former might easily be imagined to be, like that of the latter, the most beautiful and serene of all. Hesiod mentions five A.—the golden, simple and patriarchal; the silver, voluptuous and godless; the brazen, warlike, wild, and violent; the heroic, an aspiration towards the better; the iron, in which justice, piety, and faithfulness had vanished from the earth, the time in which Hesiod fancied that he himself lived. Ovid closely imitates the old Greek except in one particular—he omits the heroic age. This idea, at first perhaps a mere poetic comparison, gradually worked its way into prose, and finally became a portion of scientific philosophy. These A. were regarded as the divisions of the great world-year, which would be completed when the stars and planets had performed a revolution round the heavens, after which destiny would repeat itself in the same series of events. Thus mythology was brought into connection with astronomy. The golden age was said to be governed by Saturn; the silver, by Jupiter; the brazen, by Neptune, and the iron by Pluto. Many curious calculations were entered into by ancient writers to ascertain the length of the heavenly year and its various divisions. The greatest discrepancy prevailed, as might naturally be expected; some maintaining that it was 3,000, and others, as many as 18,000 solar years. The Sibylline books compared it to the seasons of the solar year, calling the golden age the spring, etc., and on the completion of the cycle, the old order was renewed. The idea of a succession of A. is so natural, that it has inwrought itself into the religious convic-

AGESILAUS—AGGRANDIZE.

tions of almost all nations. It is sanctioned by Scripture, for it is symbolically adopted in the Apocalypse to a certain extent; it also manifests itself in the sacred books of the Indians. Modern philosophy, at least in Germany and France, has also attempted to divide human history into definite A. or periods. Fichte numbers five, of which he conceives that we are in the third; Hegel and Auguste Comte reckon three, placing us in the last. The course of history, however, proceeds in quiet indifference to all metaphysical dogmatism.

AGESILAUS, *a-jès-i-lā'us*, king of Sparta, B.C. 443-360: (399-360): elevated to the throne, 399, chiefly by the exertions of Lysander. Being called upon by the Ionians to assist them against Artaxerxes, he began a splendid campaign in Asia; but was compelled by the Corinthian war, in which several of the Grecian states were allied against Sparta, to leave his conquest over the Persians incomplete, and return to Greece. At Chæronea, B.C. 394, he gained a victory over the allied forces, and in 378 the war was concluded by a treaty of peace in favor of Sparta. Afterwards, in the Theban war, though hard pressed by Pelopidas and Epaminondas, he bravely and ably defended his country. A. is described as of small stature but commanding aspect, blameless in his private character, and, in public life, just, as far as his partiality for his own country allowed. His biographers are Xenophon, Plutarch, and Cornelius Nepos.

AGG, *v.* *äg* [from *nag*, in the sense of gnaw: Icel. *nagga*, to gnaw: Swed. *nagga*, to gnaw, to irritate]: in *OE.*, to provoke; to dispute. **AGG'ING**, *imp.* **AGGED**, *pp.* *ägd*. See Egg 2.

AGGLOMERATE, *v.* *äg-glöm'er-ät* [L. *agglomerātus*, collected in a body—from *ad*, *glömērō*, I wind round; *glömūs*, a ball of thread]: to wind to or on; to gather into a mass; to grow into a mass: **ADJ.** heaped together: **N.** in *geol.*, a term employed to designate accumulations of angular fragments of rocks thrown up by volcanic eruptions. **AGGLOM'ERA'TING**, *imp.* **AGGLOM'ERA'TED**, *pp.* **AGGLOMERATION**, *n.* *äg-glöm'er-ä'shün*, the state of being gathered into a mass or ball.

AGGLUTINATE, *v.* *äg-glöt'in-ät* [F. *agglutiner*, to glue together—from L. *agglutinātus*, fastened to, attached to—from L. *ad*, *glut'inō*, I glue]: to glue on to; to unite or cause to adhere. **AGGLUTINA'TING**, *imp.* **AGGLUTINA'TED**, *pp.* **AGGLUTINANT**, *a.* uniting parts, as with glue: **N.** that which causes adhesion. **AGGLUTINATION**, *n.* *äg-glöt'-i-nä'shün*, the act of uniting by a tenacious substance. **AGGLUTINATIVE**, *a.* *äg-glöt'-i-nä'tiv*, tending to or causing union; applied to languages whose compounds and inflections are formed by the apposition of words without fusion or alteration.

AGGRANDIZE, *v.* *äg'grän-diz'* [F. *aggrandissant*, increasing, augmenting—from L. *ad*, *grandis*, great—*lit.*, to make greater]: to exalt; to raise to wealth, honor, or power. **AG'GRANDI'ZING**, *imp.* **AGGRANDIZED**, *pp.* *äg'grän-diz'ed'*.

AGGRATE—AGHMAT.

AGGRANDIZER, n. *äg'grăn-dî-zér*, one who exalts. **AGGRANDIZEMENT**, n. *äg'grăn-dîz'mènt*, the making greater in power, wealth, or honor.—**SYN.** of 'aggrandize': to exalt; enlarge; improve; increase; augment; promote; advance.

AGGRATE, v. *äg-grät'* [L. *ad, grātus*, pleasing, agreeable]: in *OE.*, to please. **AGGRA'TING**, imp. **AGGRA'TED**, pp. *äg-grā'tèd*.

AGGRAVATE, v. *äg-grā-vāt* [F. *aggraver*, to make worse: L. *aggrāvātus*, made heavy—from *ad, grāvis*, heavy]: to add to or increase the weight; to make anything worse or less endurable. **AG'GRAVA'TING**, imp. **AG'GRAVA'TED**, pp. **AGGRAVATION**, n. *äg'grā-vā'shùn*, a making worse; what excites anger or emotion.—**SYN.** of 'aggravate': to exaggerate; magnify; heighten; raise; increase; exasperate; irritate; provoke;—of 'aggravation': provocation; irritation; exasperation.

AGGREGATE, v. *äg'grè-gāt* [L. *aggregātus*, gathered together as a flock—from *grex*, a flock: F. *agréger*, to incorporate]: to bring together as a flock; to collect into one sum, mass, or body; to accumulate: **ADJ.** formed by a collection of many particulars: N. the sum total; the result of many particulars. **AG'GREGA'TING**, imp. **AG'GREGA'TED**, pp. **AG'GREGATELY**, ad. *-lî*, collectively. **AGGREGATION**, n. *äg'grè-gā'shùn*, the act of heaping together; a collection. **AG'GREGA'TOR**, n. one who. **AG'GREGA'TIVE**, a. *-tîv*, collective. **AG'GREGA'TIVELY**, ad. *-lî*. **BY AGGREGATION**, consecutively; with no pause between.—**SYN.** of 'aggregate, v.': to accumulate; pile; collect.

AGGRESS, v. *äg-grès'* [OF. *aggressor*, to assail, to assault—from L. *aggressor*, gone to, approached, assailed—from *ad, gressus*, walked or gone—*lit.*, to go to with hostile intent]: to begin a quarrel or controversy; to commence an attack. **AGGRESSING**, imp. **AGGRESSED**, pp. *äg-grèst'*. **AGGRESSION**, n. *äg-grèsh'ûn*, the first act leading to a quarrel or dispute. **AGGRES'SOR**, n. one who first attacks or begins a quarrel. **AGGRESSIVE**, a. *äg-grès'iv*, tending to or relating to the first attack. **AGGRES'SIVENESS**, n. *-iv-nès*, the state or quality of being aggressive.—**SYN.** of 'aggression': assault; injury; attack; encroachment; invasion.

AGGRIEVE, v. *äg-grèv'* [OF. *agrever*; F. *grever*, to aggrieve: F. *grief* or *grève*, grievous: L. *aggrāvārè*—from *ad, grāvis*, heavy—*lit.*, to bear heavily on]: to afflict; to pain or injure any one; to injure in one's right. **AGGRIEV'ING**, imp. **AGGRIEVED**, pp. *äg-grèv'd'*. **AGGRIEVANCE**, n. *äg-grèv'āns*, injury; wrong; oppression.

AGHAŠT, a. or ad. *äg-gāst'* [AS. *a*; Dan. *gyse*, to shudder at: Meso-Goth. *us-gaiejan*, to make aghast—from *geisan*, to terrify: Scot. *gousty*, dreary, that causes shuddering]: struck with horror; stupefied with sudden fright. *Note.*—Formerly in *OE.* spelt **AGAZED**, as if *agazing* at an object of astonishment or horror; latterly confounded with *ghostly*, and so in error an *h* has been introduced into **AGHAŠT**: in *OE.*, used as pt. of **AGAZE**.

AGHMAT, *äg-māt'*, or **AGHMET**; fortified town of

AGILA WOOD—AGIS.

Morocco, cap. of a province, on the left bank of the Enfis, a tributary of the Tensift, on the n.w. slope of Mount Atlas, 24 miles s. from Morocco. A. is said to have been at one time the residence of the Moorish emperor. Pop. 6,000, of whom about 1,000 are Jews.

AGILA WOOD: see ALOES WOOD.

AGILE, a. *āj'il* [F. *agile*—from L. *agilis*, quick—from *āgō*, I drive]: nimble; not slow; active. AGILELY, ad. *āj'il-lī*. AGILITY, n. *āj'il-ti* [F. *agilité*]: nimbleness; the power of moving quickly: also AGILENESS, n. *āj'il-nēs*.—SYN. of 'agile': nimble; alert; active; lively; brisk; quick; ready; prompt; sprightly.

AGINCOURT: see AZINCOURT.

AGIO, n. *āj'i-ō* [F. *agio*; It. *aggio*, the rate of exchange, a premium]: the difference in accepted value of bank-notes and that of current money or coin; the premium charged by money-changers. AGIOTAGE, n. *āj'i-ō-tāj'*, the methods employed by speculators in the public funds to lower or raise their price by spreading false rumors, etc.; the regulation of rates ruling agio.

AGIO, *āj'i-ō*: from an Italian word, signifying 'accommodation'; first used in Italy to denote the premium taken by money-changers in giving gold for silver, on account of the greater convenience of gold for transport. A. is now used to denote the difference between the real and the nominal value of money; also the variations from fixed pars or rates of exchange. It corresponds very nearly to the English word 'premium.'

AGIS, *āj'is*: name of several kings of Sparta. Mention is made of a king A. as early as about B.C. 1000, who subdued the old inhabitants of Sparta, and made the Helots vassals or slaves. Of the others, A. I. reigned during the greater part of the Peloponnesian war (B.C. 420–397). A. II. ascended the throne B.C. 338. His hatred of the Macedonian supremacy led him to form alliances with several Persian satraps against Alexander the Great. A., after extending his conquests to almost all the cities of Peloponnesus, fell in battle B.C. 330.—A. III. came to the throne B.C. 244, when the state of Sparta had fallen into a ruinous condition through long-continued war. Though only 20 years old when he began to reign, he boldly resolved to restore the old institutions and severe manners of Sparta; but intrigues and self-interest in the higher classes frustrated his designs. The riches of the state were now in the hands of a few persons, while a great majority of the people were in extreme indigence. A., therefore, in accordance with the old laws of the state, proposed a redistribution of landed estates by lottery. The new ephorus, Agesilaus, who was rich in landed property, but burdened with many debts, astutely proposed that first all debts should be cancelled, and next the lands should be divided. The first part of this plan was soon effected; but great hindrances were opposed to the carrying out of the remainder. Meanwhile, the disappointed people were easily persuaded that A. had

AGIST—AGNANO.

endeavored to introduce measures inimical to the welfare of the state. Pursued by his enemies, he fled for refuge to a temple, but was betrayed by false friends into the hands of the magistrates, who immediately ordered him to be put to death by strangulation, B.C. 240. His mother and his grandmother, who had favored his measures, were barbarously executed in the same manner. Alfieri, the Italian poet, wrote a powerful tragedy on the fate of A. III.

AGIST, v. *ă-jĭst'* [OF. *giste*, a place to lie down in; *agister*, to give lodgings to: L. *ad*, *jūcō*, I lie down]: in *OE.*, to take in the cattle of others to graze. **AGIS'TOR** or **AGISTATOR**, n. *ă-jĭs-tă'tēr*, one who. **AGIST'MENT**, n. the profit of cattle pasturing on land; the pasturing of cattle.

AGITATE, v. *ă-jĭ-tăt* [L. *agitātus*, put in constant motion—from *agō*, I drive, I move: F. *agiter*]: to put into active motion; to stir violently; to disturb; to examine and discuss with active heat and zeal. **AG'ITA'TING**, imp. **AG'ITA'TED**, pp. **AGITABLE**, a. *ă-jĭ-tă-bl*. **AGITATION**, n. *ă-jĭ-tă'shun*, the putting into violent motion; excitement of the mind; the heated or turbulent discussion of a question. **AGITATOR**, n. *ă-jĭ-tă'tēr*, one who rouses or stirs up; a stirrer or mixer. **AGITATIVE**, a. *ă-jĭ-tă'tiv*, having power or tendency to agitate.—**SYN.** of 'agitate': to rouse; stir; excite; actuate; shake; move; debate; ventilate; discuss; canvass; disturb; distract; revolve; consider; deliberate; contrive;—of 'agitation': trepidation; tremor; emotion; excitement; commotion.

AGLET, n. *ăg'lĕt*, also **AIGLET**, n. *ăg'lĕt* [F. *aiguillette*, an aiglet—from *aiguille*, a needle]: the tag of a point; any small object hanging loosely—as a spangle, the anthers of a tulip or of grass, or the catkins of a hazel.

AGLOW, a. *ă-glō* [AS. *a*, intensive, and *glow*]: very warm; red and bright with heat, as the cheeks; glowing.

AGMINATED, a. *ăg'mĭn-ă-tĕd* [L. *agmen*, a troop; *ăg-minis*, of a troop]: in close order; aggregated—used only of certain glands.

AGNAIL, n. *ăg'nāl*, also **ANGNAIL**, n. *ăng'nāl* [F. *angonaille*, a blotch, a pimple: mid. L. *anguen* and *anguenālĭā*, a carbuncle, redness]: in *OE.*, the redness of inflammation; a swelling; a corn on the foot. *Note.*—This word has been confused with next entry by a misspelling—see **Skeat**.

AGNAIL, n. *ăg'nāl* [AS. *a*, on; *nægel*, a nail]: a sore under the nail; a whitlow. *Note.*—Primarily *hangnail*, and meaning small pieces of partially separated skin about the roots of the finger nails. See **AGNAIL** 1.

AGNANO, *ăn-yă'no*: small lake near Naples, about 60 feet in depth, with no visible outlet. The surrounding country is volcanic and mountainous. Formerly the lake was named *Anguiano*, from the number of snakes in the neighborhood. On the right of Lake A. lies the *Grotto del Cane*—so called from the stratum of carbonic acid gas, some 18 inches deep, which always covers the floor and which suffocates a dog (*cane*) or other small animal taken into it—and on the left are found the natural vapor-baths of

AGNATE—AGNESI.

San Germano, used for the cure of gout, rheumatism, etc., but inferior in virtue to the baths (*Stufe di Nerone*) at Baiæ. The volcanoes surrounding the lake have been extinct since 1198. Further on the left from A. lies the lake of *Astroni*, which occupies the crater of an extinct volcano, and is surrounded by beautiful woodlands.

AGNATE, a. *äg'nât* [L. *agnâtus*, born in addition—from *ad, nâtus*, born: F. *agnat*, agnate]: paternally related; related in the male line: N. any descendant by the father's side. **AGNATION**, n. *äg-nâ'shun*, direct descent from the same father in the male line. **AGNATIC**, a. *äg-nât'ik*, descent in the male line.

AGNATE, in Law: a person related through the father, 'as a cognate is a person related through the mother. In the Roman law, both of these terms had a somewhat different signification. Agnates, by that system, were persons related through males only, while cognates were all those in whose connection, though on the father's side, one or more female links intervened. Thus, a brother's son was his uncle's A., because the propinquity was wholly by males; a sister's son was his cognate, because a female was interposed in that relationship. In the United States and in Great Britain the intervention of females is immaterial, provided the connection be on the male, or paternal, side of the house. The cause of this change in the meaning of terms manifestly borrowed from Roman law, seems to be that in Rome the distinction between agnates and cognates was founded on an institution not adopted in the Roman sense by any modern nation—that of the *patria potestas* (q.v.). Roman agnati are defined by Hugo to be all those who either were actually under the same *paterfamilias*, or would have been so had they been alive; and thus it was that, as no one could belong to two different families at the same time, the agnation to the original family was destroyed, and a new agnation created, not only by marriage, but by adoption (q.v.). The foundation of cognation, again, was a legal marriage. All who could trace up their origin to the same marriage were *cognati*; and thus the term *cognatus*, generally speaking, comprehended *agnatus*. But though an agnatus was thus almost always a cognatus, a cognatus was an agnatus only when his relationship by blood was traceable through males. Justinian abolished entirely the distinction between agnates and cognates. See **SUCCESSION**; **GUARDIAN**.

AGNESI, *ân-yâ'sê*, **MARIA GÆTANA**: 1718-99; b. Milan: a woman remarkable for varied attainments. In her ninth year she could converse in Latin, and gave a lecture in this language, in which she argued that a knowledge of the ancient languages was a proper accomplishment in women. In her eleventh year she could also speak Greek fluently, and subsequently acquired with great facility several of the Oriental languages, also French, Spanish, and German. This precocious development of intellect was encouraged by her father, who invited parties of learned men to his house, with whom Maria disputed on philosophical points. Of her discourses in these parties,

AGNITION—AGNUS-DEI.

her father published some specimens, entitled *Propositiones Philosophicæ* (Milan, 1738). After her twentieth year, she devoted her mind to the study of mathematics, wrote an unpublished treatise on *Conic Sections*, and published her *Instituzioni Analitiche* (2 vols., Milan, 1748). When her father was disabled by infirmity, she took his place as prof. of mathematics in the Univ. of Bologna, by the appointment of Pope Benedict XIV. She at last became a nun, and gave the whole of her time to attendance on the poor and the afflicted. Maria A. was a remarkable exception to the general rule of precocious intellect and short life.

AGNITION, n. *äg-nîsh'un* [L. *agnitiōnēm*, a knowing—from *ad*, *gnosco*, I know; *notus*, known]: acknowledgment.

AGNOMEN, n. *äg-nō'mēn* [L. *ad*, *nomen*, a name]: a name added to one's usual name. **AGNOM'INA'TION**, n. the practice of giving an additional name.

AGNONE, *än-yo'nā*: town in s. Italy, province of Campobasso, 22 m. n.w. from the town of Campobasso. It stands on a hill, and is said to occupy the site of the ancient *Aquilonia*. It is celebrated for its copper works. Pop. 7,500.

AGNOSTICISM, n. *äg-nōs'tî-sîzm* [G. *agnōstōs*, not to be known or recognized, ignorant of—from *a*, without, not; *gnōtos*, known; *gnōstos*, made known]: a term descriptive of the belief or creed of a Christian sect of the 3d and 4th centuries, who held that God did *not know* all things; the doctrine of those who believe that God *does not know* all things, or that God cannot be known; the religion of unknowableness. **AGNOS'TIC**, n. one who believes and teaches that God is not omniscient; one who holds that God cannot be known, and that nothing can be known save by experience.

AGNOSTICISM: a name recently invented for a system of thought of which the main characteristic is, that it strictly limits human knowledge to the sphere of experience, to phenomena, and the relative; and denies the possibility of knowing or affirming anything as to the infinite, the unconditioned, the absolute, as to the existence of God, as to

immortality, the origin of matter, or of original causes. Positivism (q.v.) has affinities with A.; and Secularism (q.v.) is distinctly an agnostic system.

AGNUS-DEI, *äg-nus-dē'i* [L. the Lamb of God]: the name given to a certain prayer used in the Roman Catholic service of Mass. The litanies generally conclude



Agnus Dei.

with the same prayer: 'O Lamb of God, that takest away

AGO—AGOUTI.

the sins of the world, have mercy upon us.'—The figure of the Saviour under the form of a lamb bearing a staff-head with a cross, and having the head surrounded with a nimbus, stamped upon an oval of wax, silver, or gold, is also styled an A. D., —the reference being to Jno. i. 29. Such medals have been consecrated by the popes since the 14 c., and are generally distributed among the faithful on the first Sunday after Easter. In the ancient church, candidates for baptism received similar medals of wax, and wore them as amulets. See AMULET. In the Greek Church, the cloth which covers the cup in the communion service bears the image of a lamb, and is styled the A. D.

AGO, ad. *ä-gō'* [OE. *ygo* or *ygon*, gone away, passed — *y* being the OE. augment of the pp., and in Ger. *ge*]: time gone by; past. AGOING, ad. *ä-gō'ing*, in or into action. AGONE, ad. *ä-gōn'*, past and gone. *Note*.—It is also said that *ago* is from OE. *agon*, to go away, to pass by: AS. *agán*, to pass away.

AGOG, ad. *ä-gōg'* [Icel. *ð*, *gægium*, on the watch or look-out; *gægjask*, agog; It. *agognārē*, to long for, to aspire to]: excited with expectation; ready to start or jog in pursuit of an object of desire. ALL AGOG, all eager.

AGONIZE, v. *äg'ō-nīz'* [F. *agonie*, struggle against death, agony: mid. L. *agonis'ta*, a soldier—from Gr. and L. *agonia*, a contest, anguish of mind—*lit.*, to enter into a struggle for life]: to suffer extreme pain or anguish; to distress exceedingly. AG'ONIZING, imp.: ADJ. causing extreme pain. AG'ONIZED', pp. *-nīz'd'*: ADJ. suffering extreme pain. AG'ONIZINGLY, ad. *-lī*. AGONY, n. *äg'ō-nī*, extreme pain or anguish, either of body or mind. AGONIST, n. *äg'ō-nīs't*, also AGONISTES, n. *äg'ō-nīs'tēz*, one who contends for the prize in public games. AGONISTIC, a. *äg'ō-nīs'tīk*, or AG'ONIS'TICAL, a. *-lī-kāl*, pertaining to contests of strength. AG'ONIS'TICALLY, ad. *-lī*.—SYN. of 'agony': pain; anguish; suffering; pang; torment; distress; throe.

AGOSTA, *ä-gōs'tā*, or AUGUSTA, *ow-gōs'tā*: fortified city of Sicily, province of Syracuse, 12 m. n. of the city of Syracuse; on a peninsula projecting into the Mediterranean. It is said to occupy the site of the *Megara Hyblæa* of the ancients, but contains no ancient remains. The present city was founded by the emperor Frederick II. in 1229. It was the last place in Sicily to hold out against Charles of Anjou, but was betrayed into the hands of William L'Estendard, one of his barons, 1268, when it was sacked, and its inhabitants mercilessly butchered. It remained desolate for years, but having been repopled, and begun again to prosper, it was burnt and razed to the ground. 1360, in another Sicilian war; and again was taken and burned by the Turks in 1551. Finally, 1663, it was destroyed by an earthquake, when one-third of the inhabitants perished. It has three long parallel streets. The houses are generally of one story. The port is spacious, but rather difficult of access. Salt is the chief article of export. Oil, wine, cheese, fruit, honey, and sardines are also exported. Pop. 12,500.

AGOUTI, *a-gū'tī* (*Dasyprocta Agouti*): a small quadruped

AGRA.

nearly allied to the Cavy or Guinea pig, very abundant in some parts of the West Indies and of S. Amer. It is often very injurious to the fields of sugar-cane. It is gregarious. Its flesh resembles that of the hare or rabbit. Other species are found in the same regions, and even in the colder parts of S. Amer. The *Pampas Hare* is *Dasyprocta Patachonica*.



Agouti.

AGRA, *â'grâ*: a British dist. in the lieut.-governorship of the n.w. Provinces of India; bounded n. and e. by the districts of Muttra, Minpooree, and Etawah, s. and w. by the territories of Dhorthpore, Gwalior, and Bhurtpore; 1,845 sq. m. The surface is mostly very level, the principal elevation of the Futtehpoore Sikri hills, a sandstone range on the w. frontier, being about 700 ft. The principal rivers are the Jumna—flowing along the n.e. frontier, and its tributary the Chumbul (along the s. boundary), both of which are too deep in the channel to be of much avail for irrigation. The district generally is, in consequence, deficient in water; and the failure of the rains in some seasons (as in 1837–8) has been followed by severe famine. The temperature has a wide range, being during the hot winds of April, May, and June, so high that the city of A. is scarcely habitable by Europeans, whereas in January, severe frosts occur at night, though the thermometer at mid-day is high. The most important commercial product is cotton, which generally occupies about a tenth of the arable land. There are two crops yearly—the spring crop, consisting of various grains (wheat, barley, oats, etc.), leguminous plants, flax, tobacco, etc.; the autumnal crop of maize, *mung*, *moth*, melons, etc. The cultivation of rice is very limited, owing to the want of water. Pop. (1881) 974,656, of whom about 100,000 were Mohammedans, Europeans, etc., the rest Hindus. Of the Hindu population, about two-thirds are agricultural; of the rest about one-fourth.—The 'division' of A., which constitutes one of seven in the n.w. Provinces, embraces the districts of A., Muttra, Furruckabad, Minpooree, Etawah, and Etah; 10,151 sq. m.; Pop. (1881) 4,834,064. See NORTHWESTERN PROVINCES. Till 1862, the city of A. was the seat of the lieut. gov., from which circumstance that functionary was sometimes called the lieut. gov. of A.

AGRA; city in the British n.w. Provinces in India, in the dist. of the same name, on the right bank of the Jumna, 189 m. s.e. from Delhi, and 783 n.w. from Calcutta. The ancient walls of the city embrace an area of about 11 sq. m., of which about one-half is at present occupied. The houses are mostly built of the red sandstone of the neighboring hills.

AGRA.

The principal street, running n.w. from the fort, is very spacious, but the rest are generally narrow and irregular, though clean. Some of the public buildings, monuments of the house of Timour, are on a scale of striking magnificence. Among these are the fortress built by Akbar, within the walls of which are the palace and audience-hall of Shah Jehan, and the Moti Masjid or Pearl Mosque, so called for its surpassing architectural beauty. Still more celebrated is the Taj Mahal, situated without the city, about a mile to the e. of the fort. This extraordinary and beautiful mausoleum was built by the Emperor Shah Jehan for himself and his favorite wife, Arjimand Banoo (surnamed Mumtaz Mahal); 20,000 men, says Tavernier, who saw the work in progress, were employed incessantly on it for 22 years. The principal parts of the building are constructed or overlaid outside and in with white marble; and the mosaic work of the sepulchral apartment and dome is described by various travellers in terms of glowing admiration. It is composed of twelve kinds of stones, of which lapis-lazuli is the most frequent, as well as the most valuable. Of British edifices in and near the city, the principal are the Government House, the College (for the education of natives), the Metcalfe Testimonial, the English Church, and the barracks. The climate at A., during the hot and rainy seasons (April to Sept.), is very injurious to Europeans; but on the whole, the average health of the city is equal to that of any other station in the n.w. Provinces. A. is fortified and has a garrison; there is a military station in the neighborhood of the city. As administrative centre of its district, and of the large 'divison' to which it gives name, A. is a place of great importance. Pop. (1881) 160,207. The principal articles of trade are cotton and salt, conveyed in large quantities down the Jumna to the lower provinces. This city is held in great veneration by the Hindus, as the scene of the incarnation of Vishnu under the name of Parasu Rama. It first rose to importance in the beginning of the 16th c., and, 1526-1658, it was the capital of the Mogul sovereigns. In that year, Aurungzebe removed to Delhi; thereafter A. declined. It was taken in 1784 by Scindia, and surrendered, 1803, to Lord Lake, after a bombardment of a few hours. Among the spoils on that occasion was a cannon of 23 inches calibre, 11½ inches metal at the muzzle; length, 14 ft. 2 inches; weight, 96,000 pounds. The balls, of cast iron, weighed 1,500 pounds. This stupendous piece of ordnance is said to have been wantonly reduced to fragments by blasting by some artillery-officers in 1833. (*Thornton's Gazetteer of India.*) During the mutiny, 1857, A. was one of the places in which the Europeans were shut up. At the outbreak, the garrison consisted of the 44th and 67th regiments of B. N. Infantry, the 3d European Fusileers, and a few artillery. The native regiments were disarmed 1857, June; and the defense of this important city devolved upon the Europeans. The ladies resorted at night to places of refuge appointed by the governor, while the gentlemen patrolled the streets; but matters growing worse both in the city and country, it was resolved, after a battle with the mutineers, to abandon the

AGRAM—AGRARIAN.

city and retire to the fort or residency. It was time; for some thousands of prisoners getting loose, began to fire all the European buildings in the city. Hardly a house escaped destruction; numbers of traders were ruined, and had to endure the misery of beholding their ruin from the fort. As the fort was both large and strongly defended, fugitives flocked in from all parts of the country, and the numbers soon swelled to 5,846. Heroic sallies were occasionally made. Major Montgomery's march to Allygurh, and his defeat of the rebels, though twenty times as numerous, was a feat worthy of Havelock. When Delhi fell, its rabble of defenders hurried off in the direction of A., which place was seriously threatened by them, but was relieved by the rapid and brilliant march of Colonel Greathed, who discomfited the enemy, and despoiled them of nearly all their baggage.

AGRAM, *á'grám* or *ög'röm*: cap. of the Austrian 'kingdom' of Croatia and Slavonia; at the foot of a richly wooded range of mountains, about 2 m. from the Save. It is divided into three parts—the upper town, built upon two eminences; the lower town; and the episcopal town. The cathedral, built in the 15th c., is one of the finest Gothic buildings in Austria. The inhabitants are principally Croats, who trade in wood and corn, and manufacture tobacco and leather. Repeated and violent shocks of earthquake, 1880, Nov., felt throughout great part of Croatia, Dalmatia, Servia, and other parts of Austria and Hungary, destroyed most of the public buildings of A., overthrew 200 houses, and caused great loss and distress. Further shocks were felt at various dates in Dec., and in 1881, Jan. The lower town is the newest and finest in appearance. A. is the place of meeting of the provincial diet. It has a university (since 1874) and a public library. Pop. (1880) 28,360.

AGRARIAN, *a. á-grā'rī-ān* [*L. agrārius*, pertaining to a field—from *ágēr*, a field]: relating to land in general. AGRA'RIANISM, *n.* the equal division of land or property. AGRA'RIANIST, *n.* one who advocates an equal distribution of land. AGRARIAN LAW, in *Roman hist.*, a law redistributing the public lands of a country or a district, giving a portion to each individual and family.

AGRARIAN LAW.

AGRARIAN LAW: a term with which was formerly associated the idea of the abolition of property in land, or at least of a new distribution of it. This notion of the A. laws of the Romans was not only the popular one, but was also received by the scholars. The French Convention, 1793, passed a law punishing with death any one who should propose an A. L., understanding by the term an equal division of the soil among all citizens. Now, it would have been strange if the Romans, with whom private property was so sacred, could ever have been brought to sanction any measure of the kind. The German scholars Heyne, Savigny, and especially Niebuhr, first explained the true nature and character of the Roman A. laws. There are still some disputed points on this matter, but one thing seems made out—that those laws had no reference to private lands held in absolute property, but to public or state lands.

As the dominion of Rome extended, a portion more or less of each conquered territory was confiscated to the state, and became public domain. All laws respecting the disposition of these lands were called A. laws; which are therefore of various kinds. What caused these laws to be so long mistaken for an interference with private rights, and excited such opposition to them at the time, was the use which was made of the public domains while unappropriated. 'It was the practice at Rome,' says Dr. Arnold, 'and doubtless in other states of Italy, to allow individuals to occupy such lands, and to enjoy all the benefits of them, on condition of paying to the state the tithe of the produce, as an acknowledgment that the state was the proprietor of the land, and the individual merely the occupier. Now, although the land was undoubtedly the property of the state, and although the occupiers of it were in relation to the state mere tenants-at-will, yet it is in human nature that a long undisturbed possession should give a feeling of ownership; the more so as, while the state's claim lay dormant, the possessor was, in fact, proprietor, and the land would thus be repeatedly passing by regular sale from one occupier to another.'

The state, however, was often obliged to interfere with these occupiers of the public lands, and resume its rights. The very idea of a citizen, in ancient times, involved that of a landholder, and when new citizens were to be admitted, they had each to receive their portion out of the unallotted public domain; which was attended, of course, with the ejection of the tenants-at-will. It appears, also, that the right to enjoy the public lands in this temporary way was confined to the old burghers or patricians. This, taken in conjunction with the tendency, strong at all times, of larger possessions to swallow up smaller, kept up an ever-increasing number of landless commons, whose destitution and degradation came from time to time to such a pitch, that alleviation was necessary, to prevent the very dissolution of the state. It is easy, however, to see what motive the patricians, as a body, had to oppose all such measures, since it was their interest, though not their right, to keep the lands unallotted.

AGRARIAN LAW.

The enactment of Agrarian laws occasioned some of the most memorable struggles in the internal history of Rome. Most of the kings of Rome are said to have carried an A. L., that is, to have divided a portion of the public land among those whom they admitted to the rights of citizenship. 'The good king,' Servius Tullius, may be looked upon as the first victim of the hostility of the nobles to Agrarian laws. About twenty-four years after the expulsion of the Tarquins, the distress of the commons called aloud for remedy, and the consul, Spurius Cassius, proposed an A. L. for a division of a certain proportion of the public land, and for enforcing the regular payment of the rent or tithe from the occupiers of the remainder. The aristocracy, however, contrived to defeat the proposal, and when the year of his consulship was out, Cassius was accused of trying to make himself king, was condemned, scourged, and beheaded, and his house razed to the ground.

The first important A. L. of a permanent nature actually passed was that proposed by the tribune Licinius Stolo, and carried, after a struggle of five years, in the year of Rome 383. The provisions of Licinius's bill, or *rogation*, were as follows: 'Every Roman citizen shall be entitled to occupy any portion of the unallotted state land not exceeding 500 *jugera* (see ACRE), and to feed on the public pasture-land any number of cattle not exceeding 100 head of large, or 500 head of small, paying in both cases the usual rates to the public treasury. Whatever portions of the public land beyond 500 *jugera* are at present occupied by individuals, shall be taken from them, and distributed among the poorer citizens as absolute property, at the rate of seven *jugera* apiece. Occupiers of public land shall also be bound to employ a certain number of freemen as laborers.'

This law produced for a time very salutary effects. But before 621, when Tiberius Gracchus was elected tribune, the Licinian law had fallen into abeyance; and although vast tracts had been acquired by the Italian, the Punic, and the Greek wars, no regular distribution of land among the destitute citizens had taken place for upwards of a century. Numerous military colonies had indeed been founded in the conquered districts, and in this way many of the poorer Romans or their allies had been provided for; but still there remained large territories, the property of the state, which, instead of being divided among the poorer members of the state, were entered upon, and brought into cultivation, by the rich capitalists, many of whom thus came to hold thousands of *jugera*, instead of the five hundred allowed by the Licinian law. To a Roman statesman, therefore, looking on the one hand to the wretched pauper population of the meaner streets of Rome, and on the other, to the enormous tracts of the public land throughout Italy which the wealthy citizens held in addition to their own private property, the question which would naturally present itself was—Why should not the state, as landlord, resume from these wealthy capitalists, who are her tenants, as much of the public land as may be necessary to provide little farms for these pauper citizens, and so convert them into respectable and independent agri-

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culturists? This question must have presented itself to many; but there were immense difficulties in the way. Not only had long possession of the state lands, and the expenditure of large sums in bringing them into cultivation, given the wealthy tenants a sort of proprietary claim upon them, but in the course of generations, during which estates had been bought, sold, and inherited, the state lands had become so confused with private property, that in many cases it was impossible to distinguish between the two. Notwithstanding these difficulties, Tiberius Gracchus had the boldness to propose an A. L., to the effect, that every father of a family might occupy 500 jugera of the state land for himself, and 250 jugera additional for each of his sons; but that in every case where this amount was exceeded, the state should resume the surplus, paying the tenant a price for the buildings, etc., which he had been at the expense of erecting on the lands thus lost to him. The recovered lands were then to be distributed among the poor citizens; a clause being inserted in the bill to prevent these citizens from selling the lands thus allotted to them, as many of them would have been apt to do.

According to the laws and constitution of Rome, there was nothing essentially unjust in this proposal, which was, in private, at least, approved of by some of the most distinguished men of the time. The energy of Gracchus carried the measure, in spite of the opposition of the aristocratic party, whose vengeance, however, could only be satisfied with the assassination of Gracchus and his brother. See GRACCHUS. The attempts to carry out the 'Sempronian law,' as it was called, were attended with great difficulties, and although not formally repealed, it continued to be evaded and rendered inoperative. Various Agrarian laws were subsequently passed; some by the victorious aristocratic party, in a spirit directly opposed to the Licinian and Sempronian laws.

Besides Agrarian laws having for their object the division among the commons of public lands usurped by the nobles, there were others of a more partial and local nature, for the establishment of colonies in particular conquered districts; these naturally met with less opposition. Still more different were those violent appropriations of territory made by the victorious military leaders in the latter times of the republic, in order to reward their soldiers, and establish exclusively military colonies. In these the private rights of previous occupants were often disregarded.

AGREE, *v.* *ă-grē'* [*F. agréer*, to receive with favor—from *d grē*, favorably—from *L. grātus*, pleasing: *Sp. agradar*; *It. aggradire*, to please, to gratify]: to be mutually pleasing to; to be of one mind; to live in peace; to be like; to settle; to be beneficial to in its effects. AGREE'ING, *imp.* AGREED', *pp.* AGREEABLE, *a.* *ă-grē'ă-bl*, pleasing; suitable to; in conformity with. AGREE'ABLY, *ad.* *-blī*, in a manner to give pleasure. AGREE'ABLENESS, *n.* *-bl-nēs*, the quality that makes a thing grateful to the taste or pleasing to the mind; resemblance. AGREE'MENT, *n.* a bargain; a renewal of friendship.—*SYN.* of 'agree': to accord; suit; coincide;

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concur; assent; acquiesce; comfort; benefit; tally with; harmonize with; answer to; correspond with; comply with; consent; accede;—of 'agreeable': pleasant; pleasing;—of 'agreement': a contract; covenant; compact; bargain; concord; resemblance; stipulation.

AGRICOLA, *a-grīk'o-lū*; **GNAEUS** or **CNEIUS JULIUS**: 37–92; b. Forum Julii (now Fréjus in Provence): a Roman of the imperial times, distinguished not less by his great abilities as a statesman and a soldier than by the beauty of his private character. Having served with distinction in Britain, Asia, and Aquitania, and gone through the round of civil offices, he was in 77 elected consul, and in the following year went as governor to Britain—the scene of his military and civil administration during the next seven years. He was the first Roman general who effectually subdued the island, and the only one who displayed as much genius and success in training the inhabitants to the amenities of civilization as in breaking their rude force in war. In his seventh and last campaign, 84, his decisive victory over the Caledonians under Galgacus, at a place called *Mons Graupius*, established the Roman dominion in Britain to some distance n. of the Forth. After this campaign, his fleet circumnavigated the coast, for the first time, discovering Britain to be an island. Among the works executed by A. during his administration, were a chain of forts between the Solway and the Tyne, and another between the Clyde and Forth. Numerous traces of his operations are still to be found in Anglesey and n. Wales, and in Galloway, Fife, Perthshire, and Angus. The news of A.'s successes inflamed the jealousy of Domitian, and he was speedily recalled. Thenceforth he lived in retirement; and when the vacant proconsulships of Asia and Africa lay within his choice, he prudently declined promotion. The jealousy of the emperor, however, is supposed to have hastened his death at the early age of 55. His life, by his son-in-law Tacitus, has always been regarded as one of the choicest specimens of biography in literature.

AGRICOLA, **JOHN** (true name, Schnitter or Schneider, also called Magister Islebius and John Eisleben, after the name of his native town): 1492–1566: was one of the most zealous founders of Protestantism. Having studied at Wittenberg and Leipsic, he was sent, 1525, by Luther, who highly appreciated his talents and learning, to Frankfort-on-the-Main, to institute there, at the desire of the magistrates, the Protestant worship. On his return, he resided as a teacher and preacher in his native town of Eisleben, till 1536. In 1537, he became a professor at Wittenberg, where the Antinomian controversy, already begun between him and Luther and Melancthon, broke out openly. See **ANTINOMIANISM**. The troubles in which he was thus involved obliged him to withdraw, 1538, to Berlin, where he was reduced to extreme want, and was thus induced to make a recantation, never altogether sincere. He then found a protector in the Elector John of Brandenburg who appointed him preacher to the court and general superintendent. He made great exertions

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for the spread of the Protestant doctrine in the Brandenburg states; but ere his death, at Berlin, he had become as much hated for his share in the drawing up of the Augsburg *Interim* (q.v.), as he had formerly been for his Antinomian opinions. Besides his numerous theological writings, his country possesses a truly national work of his entitled *Die Gemeinen Deutschen Sprüchwörter mit ihrer auslegung* (Common German Proverbs, with their Explanation). The patriotic feeling, pure morals, and pithy language of this book, have given it a place among the first German works of that age.

AGRICOLA, RUDOLPHUS: 1443-85; b. Baffo, near Gröningen: one of the most learned and remarkable men of the 15th c., and a chief instrument in transplanting the taste for literature, just revived in Italy, into his native country of Germany. His name was properly Rolef Huysmann (i.e., houseman or husbandman), which was latinized by him into A., after the usage of the time. He was also called Frisius, and Rudolph of Gröningen, from his native place, and sometimes Rudolph of Ziloha, from the monastery of Silo, where he spent some time. Having been first a disciple of Thomas à Kempis at Zwolle, he went to Louvain, then to Paris, thence to Italy, where, during 1476-77, he attended the lectures of the most celebrated men of his age. Here he entered into a close friendship with Dalberg, afterward Bishop of Worms. He was the first German who distinguished himself in Italy in public speaking and lecturing, and this he did, not only by his erudition, but by the elegance of his language and the correctness of his pronunciation. He likewise acquired reputation as an accomplished musician, and his pieces were popular throughout Italy. On his return to Germany, he endeavored, in connection with several of his former co-disciples and friends, among whom were Alexander Hegius and Rudolphus Lange, to promote a taste for literature and eloquence in Germany. Several cities of Holland vainly strove with each other to obtain his presence by offering him public functions; but not even the brilliant overtures made to him by the court of the emperor Maximilian I., to which he had repaired in connection with affairs of the town of Gröningen, could induce him to renounce his independence. At length yielding, 1483, to the solicitations of Dalberg, chancellor to the Elector Palatine and Bishop of Worms, he established himself in the Palatinate, where he sojourned alternately at Heidelberg and Worms, dividing his time between private studies and public lectures, and enjoying high popularity. He distinguished himself also as a painter, and at the age of 40 set with ardor to learn Hebrew, in order to study theology. He went again, 1484, with Dalberg into Italy, and died shortly after his return to Germany. His fame rests chiefly on his personal influence. His compositions, which are written in Latin, are neither so numerous nor so important as those of many his learned contemporaries. The first nearly complete edition of them was that published by Alard (2 vols., Cologne, 1539). Consult Tressling, *Vita et Merita R. A.* (Gröningen, 1830).

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AGRICULTURAL CHEMISTRY: that branch of chemical science which treats of the composition of soils and manures, and of the vegetable and animal substances which it is the object of agriculture to produce. See **DRAINAGE: IRRIGATION: MANURES: SOILS**, etc.

AGRICULTURAL EDUCATION: a comprehensive term, now including instruction in chemistry, geology, botany, zoology, mechanics—embracing, in short, the *science* as well as the *practice* of agriculture. However important the branching off of education into this special track, it is only of late years that it has had adequate attention. The first agricultural school was founded by Fellenberg at Hofwyl, in Switzerland, 1806. His pupils were taken from the poorest class of peasantry, of whom he truly observed, that having 'no other property than their physical and mental faculties, they should be taught how to use this capital to the best advantage,' by a combination of 'discipline, study, and manual labor.' No fewer than 8,000 pupils were trained in this school, which flourished for thirty years under the able direction of Wehrli. Since then various institutions of the same character have sprung up on the continent. In France several have been supported by the state—the principal being one at Grignon, to which an old royal palace with its domain of 1,185 acres has been given. One of the first duties undertaken by the new government of Marshal MacMahon, 1873, was the nomination of a commission to re-organize the system of agricultural education. In Prussia there is scarcely a province that has not its agricultural school and model farm; indeed, throughout Germany, and in Russia as well, we find educational institutions supported by the state, in all of which, with some slight difference of detail, agriculture is practically as well as theoretically taught. More recently, experimental stations have been established in various parts of the German empire. Indeed, the agricultural schools and field experimental stations in Germany are a credit to that country and an attraction to visitors from other countries.

In America increasing facilities are being provided for acquiring a thorough knowledge of agriculture scientifically as well as practically. Several of the British colonies have recently established boards of agriculture and agricultural schools. The government of Ontario started an agricultural college and model or experimental farm at Guelph, 1874. It has so far been very successful. An efficient staff of lecturers has been secured, and instructions are systematically given to first-year's students in agriculture, chemistry, zoology, anatomy, physiology, and book-keeping; while second-year's students are taught entomology, meteorology, and cattle pathology. High-bred stock of various kinds, imported from the mother-country, is kept on the college farm.

The first scientific college organized in the United States, strictly speaking, was the Rensselaer Polytechnic Institute, Troy, N. Y., 1824. It was not until 1847 that the Sheffield Scientific School of Yale College, New Haven, was established. The former of these is not in any sense agricultural in its teach-

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ings, and the latter did not become so until 1863, but these two institutions present the beginning of special technological instruction in the United States, with the exception of the U. S. Military and Naval Academies, West Point, N. Y., and Annapolis, Md., in which this study was subordinate. Agricultural education received its first specific advancement in America in 1862, when the law of congress went into effect, appropriating ten million acres of land to the several states, in accordance with the number of representatives from each in congress, for aid in the establishment and support of agricultural colleges and schools. This bill was contemporary with that establishing the Agricultural Department. The appropriation for the purposes set forth was at the rate of 30,000 acres to each senator and representative in congress, to be applied in the states which they severally represented. This land was granted with the proviso that its income, or all moneys derived from it, should be invested in United States or state stocks, or other safe security, at not less than five per cent interest, the capital to remain intact, and the interest devoted to the purposes set forth in the act: except that each state was empowered to apply a sum not exceeding ten per cent. on the amount received to the purchase of land or farms, under legislative enactment. The clause in the act descriptive of its general purpose, set forth that the interest of the fund should be applied by each state 'to the endowment, support, and maintenance of at least one college, where the leading object shall be (without excluding other scientific and classical studies, and including military tactics) to teach such branches of learning as are related to agriculture and the mechanic arts, in such manner as the legislatures of the states may respectively prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life.' In 1885, there were 49 institutions endowed under the national land grant, of which the following is the official list:

AGRICULTURAL EDUCATION.

STATISTICS OF SCHOOLS OF SCIENCE (MINING, ENGINEERING, AGRICULTURE, ETC.) ENDOWED WITH NATIONAL LAND GRANT.

NAME.	Location.	Organized.	Number of Students.	Appropriation for 1884.
State Agricultural and Mechanical College.....	Auburn, Ala.....	1872	126	\$30,000
Arkansas Industrial University.....	Fayetteville, Ark.....	1871	240	7,500
Colleges of Agriculture, etc., University of California.....	Berkeley, Cal.....	1869	42	.....
State Agricultural College.....	Fort Collins, Col.....	1879	61	20,888
Sheffield Scientific School of Yale College.....	New Haven, Conn.....	1847	201	.....
Agricultural Department of Delaware College.....	Newark, Del.....	1870	..	.....
State Agricultural College.....	Lake City, Fla.....	.....	..	.....
Georgia State College of Agriculture, University of Georgia.....	Athens, Ga.....	1872	39	.....
Southwest Georgia Agricultural College, University of Georgia.....	Cuthbert, Ga.....	1879	96	.....
North Georgia Agricultural College, University of Georgia.....	Dahlonega, Ga.....	1873	205	10,000
Middle Georgia Military and Agricultural College, University of Georgia.....	Milledgeville, Ga.....	1880	392	4,000
South Georgia College of Agriculture, University of Georgia.....	Thomasville, Ga.....	1879	228	.....
University of Illinois.....	Urbana, Ill.....	1868	314	24,000
Purdue University.....	La Fayette, Ind.....	1874	200	20,000
Iowa Agricultural College.....	Ames, Iowa.....	1869	231	2,500
Kansas State Agricultural College.....	Manhattan, Kan.....	1863	391	10,500
Agricultural and Mechanical College of Kentucky.....	Lexington, Ky.....	1866	210	16,500
Louisiana State University and Agricultural and Mechanical College.....	Baton Rouge, La.....	1874	93	10,000
Maine State College of Agriculture and the Mechanic Arts.....	Orono, Me.....	1868	76	6,500
Maryland Agricultural College.....	Agricultural College, Md.....	1859	46	.....
Massachusetts Agricultural College.....	Amherst, Mass.....	1867	90	10,000
Massachusetts Institute of Technology.....	Boston, Mass.....	1865	328	.....
Michigan State Agricultural College.....	Agricultural Coll., Mich.....	1857	177	32,178
College of Agriculture and Mechanical Arts, University of Minnesota.....	Minneapolis, Minn.....	1867	....	.....

AGRICULTURAL EDUCATION.

STATISTICS OF SCHOOLS OF SCIENCE (MINING, ENGINEERING, AGRICULTURE, ETC.) ENDOWED WITH NATIONAL LAND GRANT—Continued.

NAME.	Location.	Organized.	Number of Students.	Appropriation for 1884.
Agricultural and Mechanical College of the State of Mississippi.....	Agricultural Coll., Miss.	1880	243	70,000
Alcorn Agricultural and Mechanical College.....	Rodney, Miss.	1872	141	11,000
Missouri Agricultural and Mechanical College, University of Missouri.....	Columbia, Mo.	1870	6	.....
Missouri School of Mines and Metallurgy, University of Missouri.....	Rolla, Mo.	1871	106	7,500
Industrial College of the University of Nebraska.....	Lincoln, Neb.	1871	23	.....
College of Agriculture, University of Nevada.....	Elko, Nev.	1874	.....	.....
New Hampshire College of Agriculture and the Mechanic Arts.....	Hanover, N. H.	1866	28	2,000
Rutgers Scientific School, Rutgers College.....	New Brunswick, N. J.	1865	54	.....
Colleges of Engineering, Agriculture, etc., Cornell University.....	Ithaca, N. Y.	1868	.....	.....
Agricultural and Mechanical College, University of North Carolina.....	Chapel Hill, N. C.	1875	148	21,850
Ohio State University.....	Columbus, Ohio	1873	140	2,500
State Agricultural College.....	Corvallis, Oregon	1872	95	.....
Pennsylvania State College.....	State College, Pa.	1859	.....	.....
Agricultural and Scientific Department, Brown University.....	Providence, R. I.	1869	50	17,500
South Carolina College of Agriculture, etc., University of South Carolina.....	Columbia, S. C.	1805	66	.....
Clafin University and South Carolina Agricultural College, etc.....	Orangeburg, S. C.	1874	.....	.....
University of Tennessee, Tennessee Agricultural College.....	Knoxville, Tenn.	1869	108	30,000
State Agricultural and Mechanical College of Texas.....	College Station, Texas	1876	22	.....
University of Vermont and State Agricultural College.....	Burlington, Vt.	1865	176	.....
Virginia Agricultural and Mechanical College.....	Blacksburg, Va.	1872	582	11,463
Hampton Normal and Agricultural Institute.....	Hampton, Va.	1868	.....	.....
Agricultural Department of West Virginia University.....	Morgantown, W. Va.	1867	118
College of Arts, University of Wisconsin.....	Madison, Wis.	1849

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There are also in the United States 43 state, local, and individually endowed, schools and collegiate departments of science, mining, engineering, etc., in some of which there is agricultural teaching, none of which have been endowed with the national land grants, the larger number of these being scientific departments of universities or collegiate institutions, or state or city schools.

In England there are as yet no state institutions for A. E. In 1845, an agricultural college (royal by command since 1880) was established, by private enterprise, at Cirencester, for the education of both resident and non resident pupils, the course of instruction extending over two years. A large farm is attached to the school. Of late strong feeling has risen in favor of more encouragement of A. E., especially by the state. British agriculturists at length came to see that as farming had become a science in itself, their educational system was lamentably defective. In the practical training the young British farmer has long been, and possibly still is, ahead of his fellows in other countries; but it has recently become notorious that, so far as an acquaintance with the various sciences that bear on agriculture is concerned, British agriculturists are considerably behind some of their neighbors—the Germans, for instance. Besides publishing twice a year a very instructive and useful *Journal*, the Royal English Agricultural Society has since 1868 given, at the close of an annual examination, handsome prizes, as well as the certificate of the society, to young men who are supposed to have finished their agricultural and scientific education. Those who obtain first-class certificates are enrolled as life members of the society. After conference with the head masters of the middle-class schools of England, this society commenced, 1874, to offer ten annual scholarships of £20 each to scholars from the middle-class schools who pass the best examinations in land surveying, the mechanics of agriculture, the chemistry of agriculture, the principles of agriculture, the nutrition of animals and plants, etc. The successful candidates must study for the year at an agricultural college, or with an approved practical agriculturist. This scheme works very successfully. Through the liberality of the Duke of Bedford, the Royal English Agricultural Society was enabled to establish an experimental farm on His Grace's property at Woburn, Bedfordshire, 1876. On this farm experiments in the fattening of stock with various kinds of food, and in the growing of crops with different kinds of manures, are carried on.

In addition to offering diplomas, life memberships, and certificates to agricultural students who successfully pass an examination similar to the above, the Highland and Agricultural Society resolved in 1874 to give ten scholarships of £20 each, tenable for one year, to students attending the agricultural department of Edinburgh Univ. (the only British university that possesses a chair of Agriculture), and five scholarships of £10 each to younger students, who may the second year compete for the £20 scholarships. The society otherwise contributes handsomely to the agricultural department of Edinburgh Univ. This society was also

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instrumental in 1875-76 in inducing the government to add agriculture to the list of subjects toward instruction in whose sciences aid is given by the Science and Art Department. Classes were early formed at Aberdeen with the view of enabling teachers of country schools to qualify for giving instruction in the elementary sciences relating to agriculture. Field experiments were begun in Aberdeenshire in 1876 through the enterprise of the leading agriculturists and the liberality of several landowners and others, who subscribed handsomely to the necessary funds. The Highland and Agricultural Society resolved also in that year to start two experimental agricultural stations in the Lothians. Many farmers, both in England and Scotland, especially the latter, keep agricultural students.

The authorities in Ireland were many years ago awake to the benefits of a scientific education for farmers. The commissioners of national education have not been idle. In 1838, they established that popular, useful, and well-conducted institution, Glasnevin Training College, which has 180 acres of land attached. Some of the students coming from minor schools and passing an entrance examination are admitted free, and get two years' training; others pay for the bare cost of their board and lodgings; while a third class consists of young men who board at their own expense in the neighborhood, and pay a moderate fee for attendance at the classes. Lectures are regularly delivered on animal and vegetable physiology, chemistry, geology, botany, and practical agriculture, while instructions in the field are carefully attended to. Much good has been done in Ireland by the attachment of small farms or gardens to about 200 national schools throughout the country, where elementary instructions in agriculture and the sciences bearing thereon are given, with excellent results. Many of the pupils pass from these schools to Glasnevin College, while the teachers of the national schools often qualify for their agricultural duties by attendance at this college and model farm. Lately, however, some of the farm schools have been discontinued by the government.

AGRICULTURAL SOCIETIES: associations for promoting the science and practice of agriculture. Such societies were established in the n. of Italy in the beginning of the last century. As early as 1723, a 'Society of Improvers in the Knowledge of Agriculture in Scotland' was instituted. This had a short existence; but the necessity of such an association was felt, and another arose in 1755. This also did not prosper; however, in 1783 a number of gentlemen met in Edinburgh and founded one destined for permanency, the well-known 'Highland Society.' The first annual meeting of this body was held in 1784, and it was incorporated by royal charter in 1787. Originally designed for the improvement of the Highlands, it extended its operations over the whole of Scotland, and confined its efforts more to the advancement of agriculture. Its title is now, under a royal charter granted in 1834, the 'Highland and Agricultural Society of Scotland.' Its earliest efforts were aided by a grant of £3,000 out of the moneys paid for

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the estates of the noblemen and gentlemen who were attainted in consequence of their accession to the rebellion of 1745. The funds required to defray the expense of the charter, however, were raised by subscription, and the members then were only about 150. In 1799 the society began to publish its Transactions or prize essays. At present its members number about 5,000. The ordinary subscription is £1 3s. 6d. annually, which may be redeemed by one payment of £12 12s. Tenant-farmers are admitted on a subscription of 10s. annually, or £5 5s. for life. The more important objects aimed at by the society are, briefly stated, the encouragement and promotion of agriculture in all its departments of science and practice: by agricultural meetings and shows; by prescribing a course of study and conferring diplomas, under royal charter (since 1856); by examining and certifying qualified students in veterinary art; by procuring for members the chemical analysis of soils, manures, etc.; by annual publication of prize-essays and of reports of proceedings of the society, and reports from the laboratory.

The general shows of stock, etc., are held once every year, at Edinburgh, Glasgow, Aberdeen, or some other principal town, and are attended by vast numbers of persons. The business of the society is conducted by a secretary at an office in Edinburgh.

The writings of Arthur Young directed attention to the agricultural condition of England, shortly after the middle of the last century. In 1793 the 'Board of Agriculture' was incorporated. This was a private association, but being supported by parliamentary grants, it so far partook of the nature of a public institution. Its 'surveys' of the different counties collected and diffused an immense amount of most valuable information. It latterly encouraged experiments and improvements of all kinds in agriculture, but was dissolved in 1816. Various societies have sprung up since then in different parts of England; of these, the 'Smithfield Cattle Club,' 'The Bath and West of England Society,' and the 'Yorkshire A. Society,' may be mentioned as the most important. The growth and vigor of the national society, 'The Royal A. Society of England,' has been beyond all precedent. It was established in 1838, and then consisted of 466 members, but in 1880 the members numbered 6,000. Its objects are almost identical with those of the Highland and A. Society of Scotland. Ordinary members pay £1 annually, or £10 for life. The *Journal*, containing interesting and original reports on A. subjects, is sent free to all the members. Ireland also has its 'Royal A. Society of Ireland.' It was formed in 1841, and has greatly assisted in advancing the agriculture of the country, especially by introducing improved breeds of cattle.—Most of the countries of continental Europe have followed the example of Great Britain in the formation of A. associations of various kinds.

In the United States, especially in the states which long ago discarded slavery, and in which the land has for generations been owned mostly by those who farm it, A. S. have sprung up in great numbers. Every state has its central

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society, which in its turn fosters a number of local associations. Indeed, in all the chief grain-producing districts each county has its own society. These being all partly supported by state money, useful information is collected, published, and sold at a cheap rate in reports. Canada follows in the wake of her enterprising neighbors, and supports by grants of money a provincial show in each province, while the county societies are numerous, and supply materials for the reports of the boards of agriculture at Toronto and Montreal. In the United States and Canada the A. S. are of a highly popular character. Prizes are given, not only for animals, implements, and dairy produce, but also for fruits. Being more of a general nature, combining agriculture, horticulture, and domestic economy, such exhibitions are frequented by all classes. They are usually denominated 'fairs,' though partaking little of the character and appearance of what is understood by a 'fair' in Europe. The diffusion of education among the farmers of the northern states has made them eager readers of A. writings, and the numerous societies soon diffuse a knowledge of improved stock, implements, and seeds over their wide territories.

AGRICULTURE, n. *äg'ri-kul'tūr* [F. *agriculture*—from L. *agricultū'rā*, agriculture—from L. *āgēr*, a field; *cultūra*, tillage]: tilling or working the ground to make it fruitful; husbandry. AG'RICUL'TURAL, a. *-tū-rāl*, pertaining to the tillage of the ground. AG'RICUL'TURIST, n. one engaged in farming; a farmer. AG'RICUL'TURALLY, ad. *-lī*.

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AGRICULTURE: the art of rearing those plants and animals best suited to supply the wants of man. Man has found the earth, in almost every clime, covered with vegetation, yet this often yields little that he can use. As the spontaneous growth of nature affords but a limited quantity of food, he at first attempts to supply the deficiency by capturing the wild animals, which often feed upon what is unsuited for his sustenance. Sometimes, however, the most fertile lands under luxuriant forests, or other natural vegetation, only support a small number of animals. In the most favorable circumstances, a given area of territory cannot maintain many of the human family, so long as they depend upon the natural vegetation or on the chase. It is only after those plants which yield man an abundant supply of food are selected and made the objects of cultivation that population augments and civilization takes its rise.

Man has selected a great variety of plants for cultivation to afford him food and clothing. In northern latitudes, wheat, barley, oats, rye, and the potato form the chief plants from which he derives subsistence. These crops are most productive when grown in summer in the temperate climates of the earth, being unsuited to the heats of the torrid zone. Their geographical limits, however, are greatly extended by growing them as winter crops on the borders of, and even within, the tropics. In these regions, however, rice, maize, millet, and other grains become far more productive of food than the already mentioned cereals are in high latitudes, as they flourish during the heats of summer. Where heat and moisture are almost perennial in the tropics, the banana, the bread-fruit tree, and other herbaceous plants and trees, are most productive of human food.—A short historical outline of the A. of different parts of the world will exhibit the chief elements that regulate the practices of the husbandman.

The early civilization of *Egypt* claims for it the first notice in a passing outline of the chief systems of A. The teeming population in ancient times in the narrow valley of the Nile, the large standing army which was maintained, the extraordinary works of engineering and architecture still visible in our day, and the exportation of corn to other nations, indicate an advanced state of A. Rain is a rare phenomenon in Upper Egypt, and fertility is maintained only by the waters of the Nile, which are subject to annual floods. The risings and ebbings are as regular now as they were in the days of Herodotus; and the agricultural systems are also in a great measure the same. The inundation which, unless prevented by embankments, covers the whole land, occurs at the hottest season. As the waters retire in October, the land is sown with what are there styled *winter crops*, consisting of wheat, barley, lentils, beans, flax, lupines, chick-pease, etc. All these crops require no further watering, as the moisture which the soil has imbibed during the inundation is sufficient to bring them to maturity about the end of April, or even a month sooner in Upper Egypt. Only one crop in the year is grown upon most of the inundated lands. But on these lands which are pro-

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ected from the inundation, *three crops a year* may be raised by means of artificial watering. Few of the plants used as winter crops can be grown in summer in Egypt. The plants adapted for summer consist of rice (largely grown in the Delta), durra, millet, maize, sesame, melons, onions; they are sown from April to August, and of several of them two crops in the season ripen under the cloudless sky of Egypt. A vast amount of manual labor and animal power is expended in watering the ground for the summer crops. The peasants use the *shadoof* for the purpose, which is a simple contrivance, used in drawing water, over a large portion of the East. The Persian wheel, driven by oxen, is largely employed; so much so that about 50,000 of these machines are at present in use in the valley of the Nile. Beside these crops, cotton, indigo, and sugar-cane are now cultivated to a small extent. When the waters rest long on the land, it answers all the ends of a fallow, by extirpating the land-weeds and disintegrating the soil. The ground, in such cases, requires no further culture than treading in the seed by animals, or slightly scratching the surface with bushes. On the other hand, the summer crops require a great deal of tending, both in cultivating and watering the soil. The diminution of the population in Egypt has in some measure deprived the country of the means of its former advanced state of A., and its present political condition is not likely to lead to much improvement.

Few historical records of the state of *Babylonian A.* have come down to us. We can judge of its productiveness only by the dense population that was supported in the plains bordering the Euphrates, where the summer climate is almost as arid as that of Egypt. That river also was subject to overflow, when the snows melted on the mountains of Armenia in summer. Further than this, however, we have no knowledge of the systems pursued or crops cultivated.

The Scriptures are full of allusions to the operations of the husbandman in *Palestine* as well as in Egypt. The operations in the two countries necessarily formed striking contrasts—the crops in the former being chiefly dependent on the rains for growth; in the latter, on the inundations of the Nile. In the Holy Land, there are extensive plains of fertile soil which yielded the finest wheat. The hillsides were covered with vines and olives, often planted on terraces formed with much labor, to afford a larger mass of soil, in which the plants might flourish in the almost rainless summers. The valleys were well watered, and afforded pasture for numerous flocks. Of the smaller cultivated plants, millet was the chief summer crop, but it was cultivated to only a limited extent, being confined to those spots that could be artificially watered. Wheat and barley were the chief cereals, as the winter rains were sufficient to bring them to maturity. The large number of inhabitants that Palestine supported under the Jews is the wonder of all modern travellers, who are struck with the ruins of ancient cities and the desolation of the country. The means of cultivation, however, disappeared with the inhabitants; and the destruction of the wood has added to the aridity of the

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climate. Concurring testimony indicates that the systems of cultivation were somewhat similar in all the countries bordering on the Mediterranean, which are characterized by arid summers, and autumn and winter rains. Irrigation, therefore, was resorted to wherever practicable.

The A. of *Italy* in the present day shows great contrasts in its condition; for while a garden like cultivation is seen in Lombardy, the utmost rudeness and backwardness prevail in the southern part of the peninsula. The social causes that have led to these results need not be indicated here. The literature of the A. of the ancient Romans throws much light on the systems that then existed in the countries bordering on the Mediterranean. As is well known, the widespread dominion of Rome rose out of a diminutive colony planted on the banks of the Tiber. In the time of the early kings, its original territory did not extend above five miles towards the Alban Hills, and still less in other directions. Romulus is said to have divided a portion of his small territory among his subjects, at the rate of little more than an acre to each. This allotment, granted in perpetuity, was not liable to be taxed, and could be sold by its owner. The whole territory was not assigned to the citizens, but the larger part was kept as domain lands, which yielded a revenue to the state by being let to the wealthy classes. These domain lands were either cultivated or allowed to remain in pasture. The common conditions were that the occupants of the corn-land paid one-tenth of the produce as rent; of vines and fruit-trees, one-fifth; and a moderate rate a head for sheep or cattle pastured. The occupants were merely tenants-at-will, and the state could resume and sell their lands at any time. A similar policy seems to have been pursued by the numerous states of ancient Italy. As these were all in succession conquered by the Romans, their lands became the property of the Roman state. Sometimes the inhabitants were wholly extirpated or sold into slavery, and their lands were partly assigned to the poorer citizens engaged in the war; the remainder, always the much larger part, became domain lands. In other instances, only a portion of the land was taken from the conquered nations; the former owners were allowed to retain them as tenants, paying the ordinary rent. Thus, from the earliest times, two classes of cultivators were in existence—the small proprietors, and the wealthy tenants, holding the lands of the state. Between the two, there was almost a perpetual strife—the one demanded the distribution of the state domains, while the others constantly resisted it. Even after the Romans became masters of the whole of Italy the citizens had little more than four acres of land assigned to each; and the domain lands increased enormously. Attempts were constantly made to restrict the extent of domain held by the patricians, but generally without effect. See **AGRARIAN LAWS**. The great extent of domain lands gave rise to the employment of slave-labor in their cultivation by the wealthy citizens. This led to the discouragement of small proprietors, so that the free population engaged in A. diminished throughout Italy. The evil was further aggravated

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by the policy that the Romans pursued towards the inhabitants of the conquered provinces: there, none of the land was held as freehold, but it was solely vested in the Roman people, being all let out for the benefit of the state. On the conquest of Sicily the wealthy Romans flocked over, and farmed the rents, as well as cultivated the lands by means of slave labor. Indeed, the chief supplies of grain sent to Rome from Sicily, Sardinia, and Carthage were raised by means of slaves. A. was long the only source of wealth open to the patricians; and it was deemed the most honorable of occupations. Its operations were then directed by men of wealth and learning; and no wonder that its literature was so copious, and held in so high estimation. Cato, the first and most celebrated agricultural writer (d. aged 88, B.C. 150), was in the middle period of life at the end of the second Punic war. The large farming system had then been fully established; and he gives not only the most minute particulars regarding the management of the slaves on his Sabine farm, but all the details of husbandry, from the ploughing of the fallows to the reaping and threshing of the crop.

The chief grain cultivated by the Romans was wheat, but barley also was cultivated to a considerable extent. Land devoted to grain was fallowed for a whole year every alternate year; in other words, the rotation consisted of 1st, wheat, 2d, fallow. One-third of the fallow was manured and sown with some green crop as cattle food. Fallow received from four to five furrows before the wheat was sown in autumn. The last ploughing left the land in narrow ridges; and as the seed was sown broadcast it came up in rows, which admitted of the crop being several times hand-hoed. The crops of wheat ripened about the middle of June, but the summers were too dry to allow of millet and other summer crops being raised with certainty. Rye, hemp, flax, beans, turnips, lupines, vetches, and lucerne are also mentioned as occasionally cultivated. Meadows were highly esteemed, and irrigation was to some extent adopted. Cattle were fed in the plains in winter, and driven towards the Apennines as the snows melted in spring, and when the pastures below became parched by the heat. The greater proportion of the surface of Southern Italy consists of thin calcareous soils, ill adapted for the growth of grain or grass; and the vine, the olive, and the mulberry become the chief objects of culture. The principal districts for growing wheat are in the neighborhood of Naples, and in the ancient Apulia, where Hannibal generally wintered when he overran Italy. Some of these rich plains are still held directly from the government, and cultivation is of the rudest character. One-third of the land is in pasture, and the other two-thirds in fallow and grain. Three or four crops are taken in succession, and the soil is then allowed to recruit its exhausted strength by remaining under pasture.

In the great plain of Northern Italy watered by the Po, A. is now in a very advanced condition. A great part of it is of great natural fertility; it drew forth the praises of Polybius, who visited it about fifty years after it came into the hands of the Romans. The oak-groves which he found

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scattered over the plains fed the immense droves of swine that were then raised in Italy. Now, however, rich and poor soils are subjected to the fertilizing influences of irrigation, and the region has become the best cultivated in Europe. No less than 1,600,000 acres of land are under irrigation, and the results are most striking. The land is forced to produce a constant succession of grass and grain. The irrigated meadows, like the pastures of Ireland and Scotland, are made the corner-stone of the systems of rotation. In general, three years in meadow are succeeded by three years in rice; two years in India corn and flax; one year in wheat sown out with grass-seeds. Large numbers of cattle are kept on the farms of Lombardy, where the land is often a complete net-work of canals, with their smaller distributing channels. There is a large exportation both of grain and dairy produce. The vast ranges of snowy mountains that bound the plain to the n., afford a never-failing supply of water during the heats of summer. The vine and mulberry beautify the country, and give employment to the dense population.

The lower latitude of *Spain* gives it a still more arid summer climate than Italy. Rains commonly fall only during the autumn and winter, and the supply is scanty and irregular. This renders Spain a poor and unproductive country, excepting where the soil can be irrigated. For this reason, the resources of its agriculture are confined chiefly to its well-watered valleys, which are capable of being made to outstrip Egypt itself in productiveness. The Moors early introduced the art of irrigation in the s. of Spain, and carried it to a high point in the kingdom of Granada. Before the conquest of that country by Ferdinand and Isabella, the valley of Granada was one well-cultivated garden. Though the undiminished powers of the land are still attested by a few spots in the *vegas* of Murcia and Granada, its present condition cannot be compared to its condition under the Moors. The high temperature admits of a succession of crops being raised in one year, as in Egypt. After wheat has been gathered in June, a crop of maize or millet, or of vegetables, is got. Maize is scarcely grown in Spain except where the land is irrigated, so that every valley is more or less under the productive influences of water. The melting of the snows in summer on the high ranges of mountains, affords a supply when it is most needed in the plains below. Vines, olives, and oranges find a genial climate for the growth in southern parts, and are important objects of culture.

France is one of the richest agricultural countries in Europe. In the s., the climate is sufficiently hot for olives, maize, the mulberry, and the vine. The summer rains, too, are more abundant than in Spain, and permit maize to be extensively grown alternately with wheat, which forms a most productive course of crops. Irrigation has received considerable attention in the southern valleys, and the reclamation of the barren wastes of the Crau in Provence, testifies to its fertilizing effects. Much of the soil in the southern provinces is poor, and not suited to the growth of

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grain; but such soil admits of the growth of the mulberry, the olive, or the vine. All these crops demand much labor in their culture, and sustain a dense population. Normandy is celebrated for its pastures. The n.w. of France generally is the most fertile tract of land in Europe. In the less advanced districts, fallow, wheat, and oats is the rotation still followed. Clovers and lucerne are largely sown in the chalky districts. In the best cultivated districts in the n., wheat and beet root or poppy are sown alternately. Beet forms a most important plant in the A. of France in the present day, as a large part of the sugar used in the country is derived from it. Much of France is divided into small properties, especially in the less fertile provinces. This division of property is, so far, a necessity, as no other industrial occupation is open to the people. As soon as manufactures raise the standard of living in the town, it will influence the condition of the rural population, and lead to the enlargement of properties.

In *Austria, Hungary*, and the countries on both sides of the Danube, the climate resembles that of the southern half of France. Maize and wheat are the chief products, but the A. labors under so many impediments that it is yet backward. In southern *Russia*, are vast tracts of rich land bordering the rivers flowing into the Black Sea and Sea of Azov, from which western Europe derives large supplies of wheat and flax-seed, as well as some maize. The northern parts of Russia are less fertile, and as yet the means of transport are defective and limited. Oats, flax, skins, and tallow are the chief products sent to market. Rye forms the common bread-corn of the lower classes. *Prussia*, unless along the shores of the Baltic, has no great proportion of fertile land within her territory; the chief article exported is the wheat from the Baltic provinces, which is of fine quality. The potato enters largely into the food of the common people in Prussia, and is used in the manufacture of ardent spirits.

Flanders has long been celebrated for its farming, and its cultivators are generally supposed to have carried improved systems into the eastern counties of England. It is characterized by painstaking management, and, at the same time, liberal application of manure. The general size of the farms may be considered rather small, but considerable capital is invested in stock and implements, and several kinds of crops are raised unknown to British A. A large part of the stock is stabled throughout the year, the grass being cut and carried from the fields. The rearing and the feeding of cattle, as well as the dairy, are often combined on the same farm. Flax is a crop which receives much careful management. Hemp and beet-root require liberal treatment with respect to manure, and enter into the rotation only where high farming is followed. The crops are so arranged in the rotation, that two cereal crops do not succeed each other. In no country are the fields kept so free from weeds as they are in Flanders, and in none do the agriculturists suffer so little from fluctuations in the prices of grain, owing to the great variety of crops that are

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England had made considerable advances in A. as far back as the 16th c. This fact may be gathered from the writings of Fitzherbert, Tusser, and others. At an earlier period, her chief article of export had been wool, which supplied the seats of manufacturing industry in Holland, but at the above date she exported also a large quantity of wheat. The increasing prosperity of the country caused a demand for butcher-meat, which began to rise in price much sooner than in Scotland. By the middle of the 17th c., turnips and red clover were introduced as field-crops, and by the end of it, the two were extensively cultivated in many parts, in alternation with corn. In 1750, the four-course shift was not uncommon in many parts of Norfolk. Under this system of, 1st, wheat; 2d, turnips; 3d, barley; 4th, grass, one half of the land was constantly under corn-crops, and the other under cattle-crops. Large numbers of sheep and cattle were fattened on the turnips and clover. In the preparation of the land for turnips, it was well cultivated and weeded, and the consumption of the roots on the land increased the yield of the barley. The four-course shift has formed the basis upon which improvements have been made in the southern and eastern parts of England. The strong soils of Suffolk and Essex yield good pasture, and about a century ago they were mostly devoted to dairy-farming. The high price of corn, however, encouraged the conversion of these lands into arable farms. The course followed was, 1st, wheat; 2d, fallow; 3d, barley; 4th, clover. Instead of the fallow, mangel-wurzel is now largely substituted, which enables the farmers to feed large numbers of bullocks in the yards, without so large an expenditure in the purchase of oil-cake as was formerly thought necessary. In the western counties, where the climate is more suitable for grass, and less so for wheat, dairy and stock-rearing become greater objects of attention. The demand for dairy produce in the neighborhood of the large manufacturing towns of the w. renders the land of much greater value under grass than under corn, more especially where the soil is tenacious. In the more friable soils of the north-western counties of England, the systems of A. resemble somewhat that of Scotland. Instead of the land lying one year under grass, it lies two, followed by oats, then turnips or potatoes, and the wheat crop is taken after this green crop, and not after the grass. This is the characteristic which distinguishes the arable-farming in the western from that in the eastern counties in England. A large portion of the surface of England is under permanent pasture, and the beauty of the meadows is unrivalled in any part of the world. The surface of England is very unequally farmed, for while A. has attained a great degree of perfection in such counties as Suffolk, Norfolk, and Lincoln, it is comparatively primitive in others. Owing to a succession of bad seasons and American competition combined, agricultural interests have suffered severely in recent years, so that in 1880-81 rents had fallen from 20 to 50 per cent.

In *Ireland*, the want of manufactures has continued to act as a great hinderance to agricultural improvements. The

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competition that arose among a generally indigent population in taking small farms, led to extravagant rents (illustrated on the application of the Land Act of 1881), the payment of which involved the starvation of the tenants. The faithful pictures which Arthur Young drew towards the close of the last century, showed the workings of such a system. The general introduction of the potato, upon which the people chiefly subsisted, enabled rents to be paid by selling the scanty produce of grain, or the pigs that were reared. The failure of the potato-crop in 1846 produced the most heart-rending scenes of misery that have been witnessed in our times. When Young made his tour, it was the common practice, among the small farmers, to take from four to six crops of oats or barley in succession, after which the land was allowed to renovate its powers by the growth of the natural grasses. On the moderate-sized farms, the cultivation was better; but turnips had little place in a course of cropping for nearly a century after they were largely cultivated in Norfolk. The Protestant population in the n. of Ireland introduced, at an early period, the culture of flax, which still forms a peculiar feature in the A. of that part of the country. The large amount of manual labor which it requires in its preparation for market has so far served to preserve the cultivators from descending so low in the scale of social existence as those in the s. As a general rule, it is found that the worst land is most densely peopled; the secondary descriptions are in moderate-sized farms; while the best land has hitherto been devoted to pasture, for which the climate is admirably suited. The winters are so mild in the s. that cattle are often not stabled. In Young's time, the Irish graziers were the only class of agriculturists that were possessed of capital. The exodus which took place after the potato-failure has relieved the country of a portion of the redundant population, but it is still too dense in many places.

Scotland made comparatively little or no advance in A. for ages before the 18th c. Donaldson, who published his *Husbandry Anatomised* ten years before the Union, affords a sufficiently accurate picture of the art as then practised. The farms were small, divided into outfield and infield land. On the former, which was furthest from the homestead, the rotation consisted of two years in grass, succeeded by two years in oats. On the infield land, barley, oats, and pease were sown in succession, and the whole manure was commonly applied to the barley-crop. The yield of corn was from three to four times the quantity of seed. Pastures were of the poorest description, as no artificial grasses were sown. Little encouragement was held out to rear cattle, for a heifer did not bring more than twenty shillings in the market—scarcely the price of two quarters of barley at that time. At the Union, however, Scotland gained free trade with her wealthier rival, from which flowed the happiest consequences. Every branch of industry shared in the newly-opened field, and none more so than A. A large trade soon arose in sending the lean cattle and sheep that were reared on the mountainous wastes, as well as in the

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low country, to be fattened on the pastures and green crops in the s. A great rise in the prices of stock soon followed, which not only encouraged improved breeds, but enabled cultivators to devote a certain portion of the arable lands to the growth of artificial grasses and turnips. Neither of these were grown previous to the Union; but in little more than fifty years afterwards, one farmer in Roxburghshire is said to have had 100 acres of turnips in one year. Towards the end of the century, turnips and artificial grasses formed the basis of improved A. in every county. Land rose greatly in value. The war-prices in the beginning of the present century gave a further stimulus to the reclamation of land. The improvements, however, were not effected without a revolution in the state of the rural population. Formerly, the farms were small, and often tilled by the members of a single family. A consolidation of farms took place, which necessitated a great change in the social condition of employers and employed, producing often painful contrasts. Of late years, the commercial prosperity of the country has greatly helped to elevate the rural population, and necessitated improvements in cottage accommodation.

Scottish A. is distinguished for great economy in labor, forming a contrast in this respect to that in the chief corn districts of England. Few farms are to be seen in the richer districts without having a fixed steam-engine for driving the barn and other machinery. Labor-saving machines have also been freely introduced. With soil, climate, and situation, the mode of cropping varies greatly over the country. In the Lothians, the six-course shift is common: namely, 1st, wheat; 2d, beans or potatoes; 3d, wheat; 4th, turnips; 5th, barley or wheat; 6th, grass seeds. In some situations, the potato crop has lately been still more extensively planted, occupying the place of the bean or the turnip. On secondary farms, the five-course rotation is more common: 1st, wheat or barley; 2d, grass; 3d, grass; 4th, oats; 5th, turnips or potatoes. The larger proportion of the surface of Scotland, however, is devoted to pasture for sheep and cattle. The mountainous tracts are generally unfit for cultivation. Little else has been done in the way of improving them than digging a few surface-drains, and improving the breeds of the stock which they feed. Sheep-farms vary in extent from 1,000 to 60,000 acres. A few of the best stock-farms may summer and winter a sheep to the acre, but most of them require three acres. The black-faced are reared upon the most elevated and exposed ground, while the Cheviots thrive on those parts that are less so. No food is usually given in winter other than what is left on the fields in autumn. Cross-breeds between the Cheviot and the Leicester are reared in the lower ranges, where a supply of turnips may be had to give to the ewes while suckling their offspring. When the sheep are to be fattened, they are taken to the arable districts. The opening of steam-navigation, and lately the system of railways, have been of infinite benefit to Scottish A. in getting a market for fat animals.

In *N. Amer.*, the same crops are raised as in correspond-

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ing latitudes in Europe. The winters in Canada and the United States are much more severe than those of western Europe, while the summers are quite as hot, and far more moist, and hence arise considerable variations in the practices of agriculture. In Canada and some of the northern states, wheat is the staple article of export. Wheat and red clover are often grown as alternate crops. The growth of wheat has enormously extended of late in the western states; and by exports of wheat, dairy produce, and cattle, or dead meat, the United States farmers compete with English farmers in English markets. Between latitudes 42° and 39° , wheat is sometimes grown alternately with maize, after the land has been under pasture for some years. Between latitudes 39° and 35° , the climate is better suited for maize than wheat, which becomes less productive. Cotton is the staple product from lat. 35° to the shores of the Gulf of Mexico. Rice is the most profitable crop in the southern states; but its culture is confined chiefly to the tidal swamps, which can be flooded by fresh water. The sugar cane is limited to the rich alluvial lands on the banks of the Mississippi as far n. as lat. 31° . Tobacco is a principal crop in Virginia and some other states. The West India Islands surrounded by the warm waters of the gulf, are free from the cold n. winds of the American continent. This circumstance favors the growth of the cane, so susceptible of injury from frosts. The rich lands of these islands produce large crops of sugar. Coffee is also grown to a considerable extent on several of the Antilles. On the Pacific coast, the climate is characterized by mild winters and dry summers, so that the agriculture must conform in some degree to that of the countries bordering on the Mediterranean. See PERLAM'S *Amer. Cyclopædia of A.* (1882).

The soil of *S. Amer.* appears to be much more fertile than that of *N. Amer.* In the southern parts, the winters are comparatively mild, when contrasted with those on the same latitudes in the British possessions. The valley of the Rio de la Plata is admirably suited for rearing sheep and cattle, which are found in immense herds in the interior. Brazil is densely wooded, showing the abundance of the rains, and the capabilities of the country for the growth of the sugar-cane. In the n., where the dry seasons are of longer duration, there are immense grassy plains called savannahs, covered with herds of wild-cattle. Though no cattle were found on the continent when discovered by Europeans, it has been asserted that more cattle are now running wild in *S. Amer.* than all the domesticated cattle of Europe.

China has a climate very similar to that of the United States e. of the Rocky Mountains. The winters are cold, and the summers moist and hot. Rice is the great staple crop in the warmer regions of the s., wherever the land can be irrigated. This plant is also cultivated to a limited extent on dry lands, with millet and maize. The density of the population in China is an indication of the advanced state of its A. The careful manner in which all the refuse of the towns and villages is husbanded and applied to the land,

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while weeds are not suffered to grow among the crops, is the secret of the productive A. of the Chinese.

The condition of A. in China shows what might be expected from enlightened policy in the promotion of that of *India*. The monsoons which prevail over Hindustan during summer cause a great luxuriance of vegetation while they last, but the extreme droughts that precede and follow them parch and wither up the shallower-rooted plants. Over a large part of India irrigation is required to produce many of the crops with certainty. In the tropical latitudes, rice is the most abundant grain-yielding plant, and forms the chief food of the people. The numerous rivers of Northern India supply the means of irrigation, and the production of food then becomes a matter of comparative certainty. Where the winters are cool, wheat and barley are grown at that season, and rice, maize, millet, etc., in summer, as in the irrigated valleys of the s. of Spain. At present, the principal drawbacks to the better cultivation of land are the deficiency in the means of transporting the produce, and the tenure by which the land is held. The fact that immense quantities of cotton and flax which are grown are literally lost for want of a market, is beginning to attract attention, since British manufacturers are suffering from the scarcity of raw material.

It would be out of place to give an outline of the A. of the other intertropical countries of the world, which have contributed so little to the common civilization of mankind. Where rains are abundant, the ease with which a subsistence can be got from large herbaceous plants, and trees yielding fruit at all seasons of the year, has been justly regarded as hindering the progress of society. The productiveness of the banana and the bread-fruit tree, considering the small amount of cultivation they require, is calculated to strike natives of colder climates with astonishment. Captain Cook eloquently remarks: 'Whoever has planted the bread-fruit trees, has fulfilled his duty to his own and succeeding generations as completely and amply as an inhabitant of our rude clime who, throughout his whole life, has plowed during the rigor of winter, reaped in the heat of summer, and not only provided his present household with bread, but painfully saved some money for his children.'

In the southern hemisphere the extent of sea greatly predominates over the land. The vapors raised over so vast an expanse of water flow towards the equator, and are chiefly deposited there in copious rains. They are not diverted by the peninsulas of S. Amer. s. Africa, or Australia, as they are by the continents of America and Asia. Comparatively sterile southern regions are the result. Australia and the Cape of Good Hope are sparingly supplied with rains, so that their soil is not very productive of grain. Cultivation languishes, and the agriculturist gives his attention to the rearing of cattle and sheep. New Zealand, however, has a climate with considerable resemblance to that of England, and is favorable for the production of grass and grain.

See AGRICULTURAL CHEMISTRY:—EDUCATION:—SOCI-

AGRIGENTUM—AGRIMONY.

ETIES: CULTIVATED PLANTS: DAIRY: DOMESTIC ANIMALS: DRAINAGE: IRRIGATION: IMPLEMENTS: MANURES: SOIL: ROTATION OF CROPS: LEASE, etc.

AGRIGENTUM, *äg'ri-jën'tum* (Gr. *Akragas*), the modern Girgenti: town on the s. coast of Sicily, lat. 37° 17' n., and long. 13° 28' e.; founded by a colony from Gela B.C. 582, and, in the earlier ages, one of the most important places in the island. In its palmy days, it is said to have contained 200,000 inhabitants. After being at first free, and then subject to tyrants, it was demolished by the Carthaginians B.C. 405, but very soon rose again. In the course of the Punic wars, it was compelled to submit to the Romans. From A.D. 825 to 1086, it was in the possession of the Saracens, from whom it was conquered by Count Roger Guiscard. The modern city contains (1881) 19,380 inhabitants, is the capital of the province of the same name, and exhibits numerous and splendid ruins, which afford inexhaustible materials for pictorial representation. Among the best preserved of these remains of antiquity is the Temple of Concord, of which only the roof and part of the front are wanting. The most extensive of the temples was that of Jupiter, 340 ft. long, 120 ft. high, and 160 ft. wide, which, at the time of its destruction, appears to have been unfinished. Only the basement and some fragments remain. Considerable ruins of the temples of Juno Lucina, of Hercules, and Æsculapius, are still found. The trade of the modern city is inconsiderable. Some corn, fruit, oil, etc., is exported, but the harbor is little frequented.

AGRIMONY, n. *äg'rî-mön'z*, also **AG'RIMO'NIA**, n. *mô'nî-ä* [L. Gr. *agrîmōnîa*—from Gr. *argos*, white]: a genus of plants of the natural order *Rosaceæ* (q.v.), sub-order *Potentilleæ*. The calyx is five-cleft, without bracts; the hardened



Common Agrimony (*Agrimonia Eupatoria*).

tube at length invests two carpels, and is covered with hooked bristles.—The COMMON AGRIMONY (*A. Eupatoria*) is a native of Britain and other parts of Europe, growing in borders of fields, on waysides, etc.; producing a spike of yellow flowers. It has an upright habit, attains a height of two feet or more, and has interruptedly pinnate leaves with the leaflets serrate and downy beneath. The flowers are small and yellow, in close racemes. The whole plant has a pleasant, slightly aromatic smell, and is bitter

and styptic. A decoction of it is used as a gargle; the dried leaves form a kind of herb tea; and the root has some celeb-

AGRIPPA.

riety as a vermifuge. Very similar to this is *A. suaveolens*, a native of Virginia, the Carolinas, etc. It has a very agreeable fragrance.

AGRIPPA, *á-grip'd*, CORNELIUS HENRY: 1486-1585; b. Cologne of a noble family: a remarkable character, distinguished as writer, philosopher and physician, who united great ability and extensive acquirements with quackery. He led an adventurous and unsettled life, quite in the spirit of his times. As early as 1509, he was appointed teacher of theology at Dôle, in Franche Comté, and attracted great attention by his lectures; but having drawn upon himself the hatred of the monks by his bitter satires, he was accused of heresy, and forced to leave Dôle. He next taught theology for some time in Cologne, occupying himself at the same time with alchemy, and then went to Italy, where he took military service under Maximilian I., and was knighted. He was afterwards made doctor of laws and of medicine, and gave lectures at Pavia, until, burdened with debt, he fled to Casale. After a time, he was appointed syndic of Metz; but in 1520 he was again in Cologne, having excited the hostility of the inquisition and the monks by his defense of a witch. His old enemies, the monks, persecuted him still in Cologne, so that he went to Freiburg in Switzerland, where he began to practice as a physician. In 1524, he went again to Metz, and there gained such a reputation that the mother of Francis I. chose him as her physician. As he declined to prophesy the issue of the campaign that Francis I. undertook in 1525 in Italy, he lost his post, and went to Holland. Here he wrote his celebrated book, *De Incertitudine et Vanitate Scientiarum* (Colog. 1527), a biting satire on the sciences as they then existed. An accusation against him having been brought before Charles V., on account of this book, he again became a fugitive, and repaired to Lyons. He there found the hatred he had early excited in France not yet extinguished, and was imprisoned; but being liberated, through the exertions of his friends, he retired to Grenoble, where he died. A. was a clear-headed man, and had the merit of successfully combating many of the prejudices of his age. His book, *De Occulta Philosophia*, containing a systematic account of the Cabbala (q.v.), directly contradicts the above work. A complete collection of his writings appeared at Lyons, 2 vols. without date (about 1550). See Life of A., and analysis of his works, by H. Morley (1856).

AGRIPPA, *a-grip'ä*, HEROD, I.: son of Aristobulus and Berenice, and grandson of Herod the Great: d. A.D. 44, in the 55th year of his age. He was educated at Rome, and lived there in a very extravagant style, giving splendid entertainments, especially to the princes of the imperial family, and scattering his money lavishly in gifts to the freedmen of the emperor, until his debts rendered it unsafe for him to remain longer in the city. He then took refuge in Idumea. From this period almost to the death of Tiberius, he suffered a variety of misfortunes, but having formed a friendship with Caligula, the latter, on his accession to the

AGRIPPA—AGRIPPINA.

throne, gave him the tetrarchies of Abilene, Batanæa, Trachonitis, and Auranitis. After the banishment of Herod Antipas, he received his tetrarchy also—namely, Galilee and Perea. Claudius, whom A. helped to secure the possession of the empire, added to his dominions Judæa and Samaria, and he was thus the ruler of a more extensive territory than even Herod the Great had been. His government was mild towards the Jews, with whom he was remarkably popular; but he severely persecuted the Christians. He caused James, the brother of John, and the head of the church at Jerusalem, to be beheaded, and Peter to be thrown into prison. He died of a peculiarly loathsome disease at Cæsarea, in Palestine, while celebrating games in honor of the emperor. The account given of this in the Acts of the Apostles substantially agrees with that of Josephus.

AGRIPPA, HEROD, II.: 27-96: son of Agrippa I. He was at Rome when his father died, and only 17 years of age. Claudius, therefore, resolved to detain him for some time, and in the mean while retransformed the kingdom into a Roman province, but presented him with the little territory of Chalcis, when his uncle Herod, who was its ruler, died. In 53 he left Rome, and received from the emperor nearly the whole of his paternal possessions, which were subsequently enlarged by Nero. Like his father, A. was fond of fine buildings, a taste which he had probably acquired by his long sojourn at Rome. He spent great sums in adorning Jerusalem, Berytus, and other cities; but he was not prudent in the distribution of his favors, or just in his treatment of the high-priests, so that he failed to secure the good-will of the Jews. He did all in his power, however, to dissuade them from rebelling against the Romans; but when he found his advice and warnings neglected, he abandoned his countrymen, and joined the imperial troops. When Jerusalem was taken, he went with his sister to live at Rome, where he was made prætor, and where he died in the 70th year of his age—the last of the Herods. It was before him that the apostle Paul made his memorable defense.

AGRIPPA, MARCUS VIPSANIUS: B.C. 63-12: a Roman, who, though not of high birth, rose to an exalted position through his own talents. He first espoused Marcella, the niece, and then Julia, the daughter of Octavius. He was eminent both in war and in peace; and as a general, counselor, and friend of the emperor, did good service to him and to the Roman state. As a general, he laid the foundation for the sole dominion of Octavius, and commanded his fleet in the battle of Actium (31 B.C.). He was generous, upright, and a friend to the arts; Rome owed to him the restoration and construction of several aqueducts, and of the Pantheon, besides other public works of ornament and utility.

AGRIPPINA, *ag'rip-pi'nä*: d. A.D. 33: daughter of M. Vipsanius Agrippa, by his wife Julia: one of the most heroic and virtuous women of antiquity. She was married to Cæsar Germanicus (see GERMANICUS), whom she accompa-

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nied in all his campaigns. She openly accused Tiberius before the senate of having hired the murderers of her husband; and the tyrant, who hated her for her virtues, and the esteem in which she was held by the people, banished her to the island of Pandataria, near Naples, where she voluntarily died of hunger. The antiquarian museum at Dresden possesses four excellent busts of her.

AGRIPPINA, daughter of Agrippina (above): b. Cologne; d. A. D. 60: one of the most detestable women that have lived. In her second widowhood, she induced the emperor Claudius, her own uncle, to marry her, and espoused his daughter, although already betrothed to another, to her son Nero. In order to bring the latter to the throne, she ruined many rich and noble Romans, excluded Britannicus, the son of Claudius by Messalina, and finally poisoned the emperor, her husband. She then endeavored to govern the empire through her son Nero, who was chosen emperor; but her ascendancy proving intolerable, Nero caused her to be put to death. She enlarged and adorned her native city, Cologne, which received from her the name of Colonia Agrippina.

AGRISE, v. *ă-griz'* [AS. *agrisan*, to dread, to fear greatly]: in *OE.*, to terrify; to disfigure; to be terrified.

AGRONOMY, n. *ă-grŏn'ô-mĭ* [Gr. *agros*, a field: *nŏmos*, a law]: the science of agriculture. **AGRONOMIST**, n. *-mist*, one who studies scientific farming. **AGRONOMICAL**, a. *ăg'rŏn-ŏm'ik-ŭl*, pertaining to the scientific management of farms.

AGROUND, ad. *ă-ground'* [AS. *a*, on, and *ground*]: on the ground; among *seamen*, stranded; run ashore.

AGTELEK, *ăg-tă-lĕk'*, **CAVERN OF** (in Hungarian, *Barad-la*, i. e., a suffocating place): one of the largest and most remarkable stalactitic caverns of Europe; near the village of Agtelek, in the county of Gomor, not far from the road from Pesth to Kaschau. It opens at the foot of a mountain with an entrance scarcely 3½ ft. high by 5 ft. wide. It consists of a labyrinth of caverns communicating with one another, many of which it is difficult, and even dangerous, to explore when the streams that flow through them are high. Numerous stalactitic structures occur in all the caverns, which, from their singular shapes, have given rise to the various names of 'the Great Church,' 'the Mosaic Altar,' 'the Image of the Virgin,' etc. The largest and most imposing of these caverns, situated about 200 paces from the entrance, is called the *Flower Garden*. It is 96 ft. high, 90 ft. wide, and nearly 900 ft. long in a straight line.

AGUADO, *ă-gwă'do*, **ALEXANDER MARIA**, Marquis de Las Marismas del Guadalquivir: 1784-1842; b. Seville, Spain: one of the wealthiest bankers of modern times. He was descended from a Jewish family, and in his youth was a soldier. During the Spanish war of independence, he fought with distinction on the side of Joseph, rose in the French army to the rank of colonel, and acted as aide-de-camp to Marshal Soult, but retired in 1815, and began a

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commission business in Paris. In this he soon realized such wealth as enabled him to found a bank. Good fortune, energy, and boldness, with a singular talent for concerting schemes, advanced him in a short time to be one of the first bankers in Paris. He also obtained a political reputation by negotiating the Spanish loans of 1823-28-30, and '31. In these operations, the Spanish government frequently invested him with unlimited powers, which he dexterously employed to save his country from national bankruptcy. Ferdinand VII. conferred on him the title of Marquis de Las Marismas del Guadalquivir. His services were also recompensed by privileges in mining and in executing public undertakings. All the Spanish bonds issuing from his house received the name of *Aguados*. It was through A. that the Greek loan of 1834 was effected. He was naturalized in France in 1828, and at his death left a fortune of above 60,000,000 francs, of which he had invested part in landed property: the castle of Château-Margaux, celebrated for its wine, belonged to him. His distinguished collection of pictures gave occasion to Gavard for the publication of the *Galerie A.* (Paris, 1837-42).

AGUARDIENTE, n. *ág-wár-dē-ēn'tě* [Sp. *aguardiente*, burning hot-water; brandy—from L. *aqua*, water; *ardens*, burning]: a strong raw spirit of Portugal and Spain; brandy, or any particularly strong liquor.

AGUAS CALIENTES, *á'gwás ká-lē-ēn'tēs*: a well-built town in Mexico, province of Zacatecas; n. lat. 21° 53' and w. long. 101° 45'; in a plain 6,000 ft. above the sea-level, and on a stream of the same name, which is tributary to the Rio Grande de Santiago. Besides the cultivation of fields and gardens, the manufacture of woolen cloth is very considerable, and is carried on on the factory system. The town is favorably situated for trade, as the great road from Mexico to Sonora and Durango is here crossed by that from San Louis Potosi to Gaudalaxara. The environs abound in hot springs, from which the town takes its name. Pop. 30,000.

AGUE, v. *ā'gū* [OF. *agu* or *ague*; Fr. *aigū*, sharp, keen—from L. *acūtūs*, sharp]: to cause to shiver: N. intermittent fever, attended with cold fits and shivering. **AGUING**, imp. *ā'gū-īng*. **AGUED**, pp. *ā'gūd*: **ADJ.** struck with an ague; chill; shivering. **AGUISH**, a. *ā'gū-īsh*, somewhat cold and shivering.

AGUE (*Febris intermittens*): common name for an intermitting fever, accompanied by paroxysms or fits. Each fit is composed of three stages; the cold, the hot, and the sweating stage. Before a fit, the patient has a sensation of debility and distress about the epigastrium; feels weak and disinclined for exertion; the surface of the body becomes cold, and the bloodless skin shrivels up into the condition termed goose-skin (*cutis anserina*). A cold sensation creeps up the back and spreads over the body; the patient shivers, his teeth chatter, his knees knock together; his face, lips, ears, and nails turn blue; he has pains in his head, back, and joints. This condition is succeeded by flushes of heat, the

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coldness gives place to warmth, and the surface regains its natural appearance. The warmth continues to increase, the face becomes red and turgid, the head aches, the breathing is deep and oppressed, the pulse full and strong. The third stage now comes on; the skin becomes soft and moist, the pulse resumes its natural force and frequency, and a copious sweat breaks from the whole body.

These paroxysms recur at regular intervals. The interval between them is called 'an intermission.' When they occur every day, the patient has *quotidian* A.; every second day *tertian*; and when they are absent for two days, *quartan*. All ages are liable to this disease; and a case is on record of a pregnant woman having a tertian A. which attacked her, of course, every other day; but on the alternate days, when she was well, she felt that the child also had A., although the paroxysms did not coincide with her own.

The exciting causes of this disease are invisible effluvia from the surface of the earth (marsh miasmata). A certain degree of temperature seems necessary—higher than 60° Fahrenheit—for the production of the poison. It does not exist within the Arctic Circle, nor does it appear in the cold seasons of temperate climates, and seldom beyond the 56° of n. lat. (Watson). It also requires moisture. In England, A. is almost exclusively confined to the eastern coast; and the extension of drainage has rendered agues far more rare than before. James I. and Oliver Cromwell died of A. contracted in London. The Pontine Marshes to the s. of Rome have long been notorious as a source of aguish fevers. Peat bog, or moss, is not productive of malaria, as is seen in parts of Ireland and Scotland. Neither is A. ever seen among the inhabitants of the Dismal Swamp—a moist tract of 150,000 acres on the frontiers of Virginia and North Carolina. The treatment of aguish fever consists generally in calomel given in purgative doses, followed by preparations of cinchona-bark, and in applying, during the paroxysm, external warmth to the body.

AGUESSEAU, *â-gâ-sô*, HENRI FRANÇOIS D': 1668–1751; b. Limoge: a distinguished lawyer and chancellor of France, and pronounced by Voltaire to have been the most learned magistrate that France ever possessed. He received his earliest education from his father; afterwards devoted himself to the study of law, became *avocat-général* at Paris in 1690, and at the age of 32, *procureur-général* of the parliament. In this office he effected many improvements in the laws and in the administration of justice. He was noticeable for great benevolence during a famine which occurred in the winter of 1709, applying all the means in his power for the alleviation of the calamity. As a steady defender of the rights of the people, and of the Gallican Church, he successfully opposed the decrees of Louis XIV. and the Chancellor Voisin in favor of the papal bull *Unigenitus* (q.v.). During the government of the Duke of Orleans, he became chancellor; but in the following year fell into disgrace by opposing Law's system of finance, and retired to his country-seat at Fresnes. When, however, the ruin induced by Law's system produced a general outcry of dissatisfaction, A. was reinstated.

AGUILAR DE LA FRONTERA—AHASUERUS.

in order to appease the people. But his well-meant efforts could not retrieve the desperate state of affairs. A. was afterwards exiled a second time, in consequence of his opposing Cardinal Dubois; and though he, 1727, obtained from Cardinal Fleury permission to return, yet he did not again resume the office of chancellor till 1737. He resigned 1750. His works, consisting of pleadings and speeches at the openings of the parliament, occupy 13 vols. (Paris, 1759-89; Paris, 1819).

AGUILAR DE LA FRONTERA, *á-gē-lár' dū lá frón-tā'-rá*: town of Andalusia, Spain, province of Cordova, occupying the summits and slopes of several low hills on the left bank of the Cabra, 26 m. s.s.e. from Cordova. Many of the houses are of three stories, and the town is remarkable for the whiteness of its houses and the cleanness of its streets. It has three fine squares, and a dismantled Moorish castle. The chief trade is in corn and wine. Many of the inhabitants are employed in agriculture, and in the breeding of oxen, horses, and mules. Pop. 12,000.

AGUILLA, n. *ă-gwīl' lá* [F. *aiguille*, a needle]: an obelisk, or the spire of a church-tower.

AGULHAS, *á-gōl'yás*, CAPE (meaning needles): the most southern point of Africa; about 100 miles e.s.e. of the Cape of Good Hope, lat. 34° 51' s., long. 19° 55' e. In 1849, a light-house was erected on it, at an elevation of 52 ft. above high water. The A. Bank extends along the whole southern coast of Africa. It is 560 m. in length, and opposite the Cape of Good Hope, as many as 200 in breadth.

AGUR, *a-gūr'*: town of India, in the territory of Gwalior, the possessions of Scindia's family, on the route from Oojein to Kota, 41 m. n.e. from Kota. It stands in an open plain, 1,598 ft. above the sea, is surrounded by a rampart of stone, and has on one side a large and fine tank. Pop. about 30,000.

AH, int. *á* [L. and F. *ah*: Ger. *ach*: Icel. *ae* or *ai*]: an exclamatory word denoting surprise, pity, dislike, etc. **AHA**, int. *ă-há'*, expressing triumph, surprise, or contempt.

AHAB, *ă'hab*: king of Israel (from B.C. 918 to 897): son and successor of Omri. He married Jezebel, the daughter of Ethbaal, king of Sidon; through whose injurious influence the Phœnician worship of Baal was introduced, the king himself seduced to idolatry, and the priests and prophets of Jehovah cruelly persecuted. Yet the prophets retained their influence over the people; and Elijah dared openly to attack the priests of Baal, and reprove the wickedness of the king with the most severe threatenings of punishment. A. prosecuted three wars, with various success, against Benhadad, king of Syria; but in the last campaign he was killed by an arrow. His whole family was afterwards extirpated under king Jehu.

AHASUERUS, *a-hūs'u-ē'rus*: name or rather, perhaps, the title, by which several kings of Media and Persia are mentioned in Scripture. The best known of these is Esther's husband (see **ESTHER**), probably the same as the Persian

AHEAD—AHMEDNUGGUR.

king Xerxes; the Hebrew form of his name (Achaschverosch) pointing to the old Persian form of the name Xerxes (Khschyârschan).

AHEAD, ad. *ä-hèd'* [AS. *a*, at or on, and *head*]: in advance; further forward than another.

AHEIGHT, ad. *ä-hit'*, also **AHIGH**, ad. *ä-hi'* [AS. *a*, on, and *height*]: in OE., on high; aloft.

AHMEDABAD, *ä'mèd-ä-bäd'*, or more properly **AHMADABAD**: chief town in the dist. of the same name, in the presidency of Bombay; is on the left bank of the Sabermutty, which flows nearly due s. into the Gulf of Cambay. It was built 1412, by Ahmed or Ahmad Shah, and underwent all the vicissitudes of government incident to the cities of Hindustan, till the year 1818, when it finally came under the power of the British. It was formerly one of the largest and most magnificent capitals in the East—in the opinion of a native writer, 'the handsomest city in Hindustan; perhaps in the world.' Its architectural relics are gorgeous, even in the midst of decay. The Jumna or Juma'ah Masjid, or Great Mosque, rises from the centre of the city, adorned by two superbly decorated minarets, 'each of which contains a circular flight of steps, leading to a gallery near the summit. Its domes are supported by lofty columns, regularly disposed; the concave of these cupolas is richly ornamented with mosaic and fret work. The pavement is of the finest marble.' The mosque of Sujaat Khan is extremely elegant. There is likewise an ivory mosque, which has obtained that name from the circumstance, that although built of white marble, it is 'curiously lined with ivory, and inlaid with a profusion of gems, to imitate natural flowers, bordered by a silver foliage on mother-of-pearl.' There are also the Fire Temple and the Tower of Silence of the Parsees. A. once abounded in gardens, aqueducts, reservoirs, etc.; but these, especially the gardens, are now sadly defaced and injured. Its prosperity has been almost wholly destroyed by the rapacity of the Mahrattas, although at one time it was famous for its manufacture of rich fabrics of silk and cotton, articles of gold, silver, steel, and enamel. 'It employed many artists in portrait-painting, and miniatures,' and had extensive trade in indigo, cotton, and opium. The old city-walls, built in 1485, which had in the course of ages, and through the assaults of enemies, become very dilapidated, were repaired in 1834 at an expense of 250,000 rupees. Water was also conveyed from the river through the city by means of pipes. Pop. (1881) 127,621. The dist. of A. in Guzerat has an area of 3,800 sq. m., and a population of 830,000.

AHMEDNUGGUR, or **AHMADNUGGUR**, *ä'mèd-nüg'gèr*: important town in the presidency of Bombay; 122 m. e. of the city of Bombay. It was founded in 1494 by Ahmad Nizam Shah. During the reign of his son, Boorhan Nizam Shah, it had high prosperity; but after his death, it witnessed an incessant series of wars, confusions, and murders. In 1797, it fell into the hands of the Mahrattas; and in 1803 was surrendered, after a trivial resistance of two days, to Gen-

AHMEDNUGGUR—AICH-METAL.

eral Wellesley. It was, however, shortly afterwards restored to the Peishwa; but in 1817, the fort was again occupied by the British. The town has increased rapidly since it came under British protection and rule. It possesses a most singular defense, in addition to its wall; this consists of an 'immense prickly-pear hedge about 20 ft. high, which is so full of sap that no fire will kindle it, and so vigorous that it is almost impossible to force one's way through it.' A. contains an English church and a *dhurmsalah* (or place of entertainment for travellers) capable of holding 250 persons. It also possesses a good supply of water by means of aqueducts. There are several places of the same name in Hindustan. Pop. 35,000. Area of the dist. of A., 6,650 sq. m.; pop. 775,000.

AHMEDNUGGUR, or **EDUR**: a Rajpoot state of Guzerat, in the Mahi Kanta agency, politically connected with the presidency of Bombay. It is under the rule of the Rajah of Edur, subject to British sovereignty. Pop. estimated (1882) 217,000.—The principal town is Ahmednugger, on the banks of the Haut Mati, a branch of the Sabarmati, in an extensive plain, 92 miles n.n.w. from Baroda; surrounded by a fine old stone wall. Pop. 9,000.

AHMEDPUR, *â-mêd-pôr'*: town of India, in the native state of Bhawulpur, 25 m. s.w. from Bhawulpur. The houses are mostly built of mud; but there is a large and lofty mosque, with four tall minarets. There are manufactures of matchlocks, gunpowder, cotton, and silk. Pop. estimated 30,000, though other estimates make it much less.

AHOY, int. *ă-hoy'* [AS. *a*, intensive: Dut. *hui*]: an exclamation used in hailing a boat; attend ye—a sailor's call; a call to a person.

AHRIMAN, *âh're-mân'* [in the Zend, *âhro mainyus*, i.e., the malignant spirit]: in the later dualistic doctrine of the followers of Zoroaster, the personification of malignity, the original source of all moral and physical evil, the chief of the devils and malignant spirits, the king of darkness and of death, the eternal enemy and opponent of Ormuzd and of his kingdom of light. See **ZOROASTER**.

A-HULL, ad. *ă-hŭl'* [AS. *a*, on, and *hull*]: maritime term, used to denote the position of a ship when all her sails are furled, and her helm lashed on the lee-side; in such a position, she lies nearly with her side to the wind, but with the head turned a little towards the direction of the wind. Nautical language comprises a large number of words formed on a principle similar to that of *ahead*, with the vowel *a* (a corruption of the Anglo-Saxon preposition *on*, meaning *on*, *in*, *at*) prefixed to a noun. Such are the following: *aback*, *abaft*, *aboard*, *abreast*, *a-cockbill*, *adrift*, *afloat*, *afore*, *aground*, *ahead*, *a-hull*, *a-lee*, *aloft*, *aloof*, *amain*, *amidships*, *an-end*, *apeak*, *ashore*, *astern*, *atrip*, *avast*, *a-weather*, *a-weigh*. See the articles under some of these titles.

AICH-METAL, *âch-*: an alloy of copper and zinc with a small addition of iron—sometimes used in the manufacture of cannon.

AID—AIDE-TOI ET LE CIEL T'AIDERA.

AID, n. *ād* [F. *aider*, to aid; *aide*, an assistant—from mid. L. *aidārē*, to help—from L. *adjūtārē*, to assist]: help; relief; assistance; a person who gives help: V. to help; to support; to relieve. **AID'ING**, imp. **AID'ED**, pp. **AID'ER**, n. one who. **AIDANT**, a. *ād'ānt*, in *OE.*, helping; helpful. **AIDANCE**, n. *ād'āns*, help; assistance. **AID'FUL**, a. giving help. **AID'LESS**, a. destitute of help.—**SYN.** of 'aid, v.': to help; assist; succor; relieve; sustain; support.

AIDAN, *ā'dān*, **SAINT**: middle of 7th c.: one of those distinguished monks of the early Scoto-Irish Church, who were received into the calendar of saints by a sort of acclamation, and without the ceremony of canonization. He was the first efficient missionary who propagated Christianity in the north of England. Oswald, the celebrated king of Northumbria, requested the community of Iona to send to his court one of their brethren who would teach the Christian religion to his people. As the history has come down to us, the first person sent was a certain Cormac, who was too dogmatic and intolerant to be a successful missionary. On his returning after a failure, A., who possessed the patience, geniality, and popular manners fitted for the task, was successful. He left a great reputation, and, as the earliest promulgator of Christianity in the northern districts, is generally counted the first in the lists of the bishops of Durham.

AIDE DE-CAMP, n. *ād'dě-kōng*, plu. **AIDES-DE-CAMP** [F. *aide*, an assistant; *de camp*, of camp]: in an *army*, an officer who serves on the personal staff of a general, or in court to wait upon the sovereign. As a military officer he may be regarded as a kind of superior confidential attendant upon a general in active service. The A. is the organ of the general. He carries all orders on the field of battle; these he is to deliver in the plainest terms, so as to be distinctly understood; and when so understood, the orders are to be as implicitly obeyed as if the general himself were present and speaking. An A. also acts as secretary to the general, and assists him in his correspondence, when he has not specifically a military secretary. He aids likewise in dispensing the courtesies of the general's house or tent. The aides-de-camp in the U. S. army vary in number from two for a brig. gen. to six for a general. In England, besides these aides-de-camp to generals, the queen has power to appoint any number of aides-de-camp to herself, in her capacity of nominal head of the army. There are no particular duties attached to the office; but it is much sought after, both as an honor, and as conferring on the holder the rank of colonel in the army. In the year 1880, there were no fewer than 36 military aides-de-camp to the queen, of whom a certain proportion were peers of the realm. In addition there are naval aides-de-camp to the queen, about 12 in number.

AIDE-TOI ET LE CIEL T'AIDERA, *ād-twa ā lě siěl t'ād-ra* (Help yourself, and Heaven will help you): a moral aphorism, the cry of certain French political writers to the middle classes, about 1824, and became the watchword of a society formed to agitate voters in opposition to the govern-

AIDIN—AIGRETTE.

ment, by means strictly legitimate. Most of its founders and active members belonged to the party of *Doctrinaires* (q.v.), as Guizot, who was president for some time, Duchatel, Duvergier de Hauranne, Dubois, Remusat, Thiers, Cavaignac, etc. *Le Globe* newspaper was the organ of the association, and afterwards *Le National*. It had a great share in bringing about the revolution, 1830, July, and was at first countenanced by the new government; but was dissolved, 1832.

AIDIN, *i-dēn'*, or **GUZEL-HISSAR**: town of Asiatic Turkey, on the river Meander, in the pachalic of Anatolia, built out of the ruins of the ancient Tralles, which was on a plateau above the present town. It is 60 m. s.e. of Smyrna, is four miles in circuit, and carries on a trade next in importance to that of Smyrna. It is adorned, like all eastern cities, with numerous mosques and other religious edifices, and has a picturesque appearance. Pop. estimated 35,000–60,000; with 6,000 houses.

AIDONE, *i-dō'nā*: town of Sicily, province of Caltanissetta, 20 m. e. by s. from Caltanissetta. It crowns a lofty height, commanding a view of the great plain of Catania. It was one of the settlements of the Lombards, who accompanied Roger the Norman in his conquest of Sicily. The road which leads to the town is very rugged, bordered by luxuriant prickly pears. Pop. 6,920.

AIDS: in feudal times mere benevolences granted by a tenant to his lord in distress; which gradually came to be regarded as matters of right. A. were demanded for three principal objects: 1st, to ransom the person of the lord when taken prisoner; 2d, to make his eldest son a knight; and 3d, to provide a suitable portion to his eldest daughter on her marriage. These A. were abolished by 12 Car. II. c. 24.

AID OF THE KING is where the king's tenants pray *A. of the K.* on account of rent demanded of them by others. In such cases, the proceedings are stopped till the king's or queen's counsel are heard to say what they think fit for avoiding the king's prejudice.

AIGRE, n. *ā'gér*: see **EAGRE**.

AIGRET, n. *ā'grèt*, also **EGRET**, n. *ē'grèt* [*F. aigrette*]: the little white heron; in *bot.*, the feathery down of the thistle.

AIGRETTE, *ā grèt'*: a French word, denoting the down or plume (botanically, *pappus*) attached to many vegetable seeds, as the thistle and dandelion. It is also used in reference to the feathery tuft on the heads of several birds, as the heron; and in English zoology the name *aigret* or *egret* (q.v.) is applied to the smaller white heron, an elegant bird, with a white body and a feathery crest. Hence the term A. came to designate the long, delicate white feathers stuck upright in a lady's head-dress. Recently, the usage has been still further extended to any head-dress resembling a plume, even a bouquet of flowers, fastened with precious stones.

AIGUES-MORTES—AILETTES.

AIGUES-MORTES, *aig-mort'* (*Aqua Mortua*: small town in France—pop. about 4,000—in the dept. of Gard, which claims to have been founded by the Roman Marius. It is in an extensive marsh impregnated with sea-salt, and is about 3 m. from the Mediterranean, with which it is connected by a canal. It was from A. M. that St. Louis sailed in 1248, and again in 1270, for the Crusades—a proof that the sea then reached this spot. In 1538, Francis I. had an interview at A. M. with Charles V. Pop. about 4,000.

AIGUILLE, n. *ā'gwīl* [F. *aiguille*, needle—from mid. L. *acūc'ulā*, a needle—from L. *acīc'ulū*, dim. of *ācūs*, a needle]: applied to the sharp serrated peaks of lofty mountains; an instr. for piercing holes for the lodgment of powder when blasting. **AIGULET**, n. *ā'gū-lēt*, or **AIGLET**, n. *ā'g'lēt*, a point or tag on fringes.

AIGUILLETTE, *ā'gū-lēt'*, or **AIGULET**: a part of the decorations of military dress; in Britain, formerly worn on the right shoulder by general officers of various grades; now worn chiefly by officers of the Life-Guards and Horse-Guards. It is composed of gold or silver cords and loops.

AIGULET: a rope called a lashing-rope, used in ships-of-war for securing the breeching of a gun.

AIL, v. *āl* [AS. *eglian*, to pain; *egle*, troublesome; Goth. *aglo*, affliction; *aglus* or *agls*, difficult; ailing]: to be sick; to trouble; to be in pain. **AIL'ING**, imp: ADJ. unwell; full of sickness. **AILED**, pp. *āld*. **AIL'MENT**, n. sickness, trouble; slight disease.

AILANTO, *ā-lān'to* (*Ailanthus glandulosa*): a lofty and beautiful tree, of the natural order *Xanthoxylaceæ* (see **XANTHOXYLON**), a native of China, but now frequently planted to shade public walks in the south of Europe, and common in England. The styles are combined at the base, the fruit consists of 3-5 *samaræ* (or winged *achenia*, q.v.). The leaves are large and pinnate, with an odd leaflet, resembling those of the ash. The tree grows better than almost any other on chalky soils, and is hardy enough to endure the climate even of the n. of Scotland. It is easily propagated by suckers and cuttings of the roots. The wood is fine grained, satiny, and suited for cabinet-making.

AILETTES, *āl-lēt'* [Fr. little wings]: appendages to the armor worn by knights in the 13th c.; sometimes made of leather, covered with a kind of cloth called *carda*, and fastened with silk laces. The form was sometimes circular, sometimes pentagonal, cruciform, or lozenge-shaped, more usually square. Sometimes they were no larger than the palm of the hand; in other instances, as large as a shield. In most instances, the A. were worn behind or at the side of the shoulders. Whether the purpose of these appendages was a defense to the shoulders in war, an ensign or mark to indicate to the followers of the knight his place in the field, or armorial bearings, is not now clearly known; but the first supposition is the most probable. A are figured on many effigies, monumental brasses, and stained windows, in cathedrals and old churches.

AILSA CRAIG—AINMÜLLER.

AILSA CRAIG, *āl'să kräg*: remarkable islet about 10 m. from the s. coast of Ayrshire, opposite Girvan, lat. 55° 15' 12" n.; long. 5° 7' w. Rising abruptly out of the sea to a height of 1,114 ft., it is a most striking object, even at a distance. It is about 2 m. in circumference, and is accessible at only one point, where the accumulation of débris has formed a rough beach. The rock may be described generally as a mass of trap, assuming in some places a distinct columnar form, with dimensions far exceeding those of the basaltic pillars of Staffa. On the n.w., perpendicular cliffs rise 200 to 300 ft.; on the other sides, the Craig descends to the sea with a steep slope, covered with grass and wild flowers, with numerous scattered fragments of rock. The only inhabitants are goats, rabbits, and wild-fowl. Solan geese, in particular, breed in the cliffs in countless numbers. About 200 ft. from the summit are some springs, and on the ledge of a crag on the eastern front are the remains of an ancient stronghold.

AILURUS FULGENS: see **PANDA**.

AIM, v. *ām* [OF. *esmer*, to estimate—from L. *æstimārē*, to value—*lit.*, to calculate the distance of the object or point desired to be struck]: to throw at an object; to direct a weapon to; to try to strike with a missive weapon; to endeavor; to purpose or design; in *OE.*, to guess or conjecture: N. the object or point intended to be struck; purpose; intention. **AIM'ING**, imp. **AIMED**, pp. *āmd.* **AIM'ER**, n. one who. **AIMLESS**, a. *ām'lēs*, without aim or purpose. **AIM'LESSLY**, ad. *-lī*.—**SYN.** of 'aim, n.': object; end; view; scope; design; purpose; scheme; drift; intention;—of 'aim, v.': to point; level; aspire; direct.

AIMON: see **AYMON**.

AIN, *ān*: river in France, rises in the mountains of the Jura, flows through the departments of Jura and Ain, and after a course of about 100 m., falls into the Rhone, 18 m. above Lyon.

AIN, *ān*: a frontier dept. of France; bounded on the n. by the departments of Jura and Saône et-Loire, on the e. it is separated from Switzerland and Savoy by the Rhone, which also divides it from Isère on the s., while on the w. the Saône separates it from the departments of the Rhone and Saône-et-Loire. The e. is mountainous; but the s. portion of the part w. of the Ain forms an argillaceous plateau, abounding with marshes, which occasion epidemic fevers. This dep. contains five arrondissements—Bourg, Belley, Gex, Nantua, Trévoux—or 35 cantons. Area, 2,230 sq. m. Pop. (1881) 361,279. Chief town, Bourg.

AINMÜLLER, *in'mül-er*, **MAXIMILIAN EMANUEL**: 1807–70: b. Munich: restorer of the art of painting on glass. He began the study of architecture, but afterwards entered the royal porcelain manufactory as decorator; and there he first overcame the technical difficulties in glass-painting. A separate institution was established for the art; and A., as inspector, brought its work near to perfection. He first is said to have conceived the happy thought of laying colored

AINOS—AINSWORTH.

glass on colored, instead of laying colored glass on white, thus giving the command of above 100 variously colored glasses, in all gradations of tint. He was also the first, in conjunction with Wehrstorfer, to execute pictures on glass, and thus revive the art of miniature glass-painting. Not only technical improvements and inventions were his contribution to the art; his artistic culture qualified him also to aid the regeneration of taste that has accompanied it. The first work of the new institution was the restoration of the windows of the cathedral of Ratisbon, 1826-33, to which A. contributed the ornamentation, painting several of the figures. He made a like contribution to the splendid windows of the church of Maria-Hilf, Munich, 1833-38. In the contribution of king Ludwig of Bavaria to the cathedral of Cologne, and the numerous other windows executed at Munich for all parts of the world, A. displayed the highest artistic faculty. One of his most important and successful undertakings was providing the fine windows of the Glasgow cathedral as recently restored, including more than 100 biblical and historical pictures. A. also acquired a reputation as an architectural painter in oil.

AINOS, *i'noz*: a race inhabiting Yesso (q.v.) and Sakhalin. See also JAPAN.

AINSWORTH, *anz'wérth*, ROBERT: 1660-1743; b. Woodvale, near Manchester, England; d. near London: author of a Latin Dictionary extensively used in the last c. He was educated at Bolton, and taught a school there for some time; afterwards was engaged for many years in educational pursuits in London. In 1714, he commenced his Dictionary (Latin-English, and English-Latin), which, however, was not published until 1736. It has been superseded by more accurate and philosophical lexicons, such as Riddell's, and more recently by Smith's, Andrews's, and others.

AINSWORTH, *anz'wérth*, WILLIAM FRANCIS: b. Exeter, England, 1807, a relation of Robert: English physician, geologist, and traveller. He studied medicine at Edinburgh, whither he returned from foreign travel, 1828, and there conducted the publication of the *Journal of Natural and Geographical Science*, and delivered lectures on geology. In 1835 he was attached as physician and geologist to the Euphrates expedition under Col. Chesney, and returned, 1837, through Kurdistan, the Taurus, and Asia Minor. In the following year he went again to Asia Minor, being sent with Rassam and Russell by the Geographical Soc., and the Soc. for the Diffusion of Christian Knowledge. The objects were chiefly to explore the course of the Halys, and to visit the Christians in Kurdistan. On his return (1841) he published *Researches in Assyria*, etc. He has published also *The Claims of the Christian Aborigines in the East*, and *Travels in the Track of the 10,000*. He has edited *Lares and Penates, or Cilicia and its Governors*; *On an Indo-European Telegraph by the Valley of the Tigris*, a project which the Turkish government has since carried out; *All Round the World*; *The Illustrated Universal Gazetteer*, etc.

AINSWORTH—AIR.

He is a member of many foreign learned societies, and was one of the founders of the West London Hospital.

AINSWORTH, WILLIAM HARRISON: 1805–82; b. Manchester, Eng., where his father was a solicitor: well known writer of fiction. His creative fancy began early to show itself in ballads and tales, in the local newspapers, and in contributions to the *London Magazine* and similar periodicals. He entered a writer's office; but forsook law for literature, and began a publishing business in London, which, however, he soon gave up in disappointment. He had previously published his first novel, *Sir John Chiverton* (1825). After spending some time on the continent, he returned to England, and wrote *Rookwood* (1834), which was favorably received. It was followed by *Crichton* (1837) and *Jack Sheppard* (1839). A. edited for a time *Bentley's Miscellany*, and in 1842 began his own *Ainsworth's Magazine*. He pub. the *Lancashire Witches* in 1848; six years later appeared the *Star Chamber*; in 1860, *Ovingdean Grange*; the *Lord Mayor of London* was pub. 1862, *Cardinal Pole*, 1863, and *John Law, the Projector*, 1864. More recent are the *Spanish Match*, the *Constable de Bourbon*, *Old Court*, *Middleton Pomphret*, *Merrie England*, *The Leaguer of Lathom* (1876), *Stanley Brereton* (1881). The 'Lancashire Novelist' was honored with a banquet in his native city in 1881.

AIN'T, *ānt*: a vulgar contr. for 'am not,' or 'is not'.
AR'N'T = are not.

AINTAB, *in-tāb'*: a town of Syria, near the source of the Kowek, an affluent of the Euphrates, 59 m. n.n.e from Aleppo. It is tolerably well built: the houses are mostly of stone. It is well supplied with water, pure streams of which flow constantly through the streets. It has a castle built upon a mound, resting on rock, and of very striking appearance. The chief trade is in hides and leather; but cotton, sheep's and goat's wool, wax, wheat, and rice are also of commercial importance, being chief articles of produce in the surrounding district. A. is supposed by some to be the ancient *Antiochia ad Taurum*. Pop. 20,000, composed of Turks, Greeks, and Armenians.

AIR, n. *ār* [F. *air*—from Gr. or L. *āēr*, air: It. *aria*, tune, air]: the atmosphere; a gas; a light breeze; a tune or melody; look or mien; affected manner. **AIRS**, n. plu. show of pride; haughtiness. **AIR**, v. to dry; to expose to the air; to parade ostentatiously before the public. **AIR'ING**, imp. **AIR**ED, pp. *ārd*. **AIRY**, a. *ār'ī*, high in air; light like air; trifling; vain. **AIRILY**, ad. *ār'ī-lī*. **AIRING**, n. a ride or walk in the open air. **AIR'LESS**, a. wanting fresh air. **AIRINESS**, n. *ār'ī-nēs*, the state of being opened freely to the air; lightness of manner; gayety; jauntiness. **AIR-TIGHT**, so close and compact as to prevent the passage of air. **AIR-BED**, a large air-tight bag filled with air for the repose of ailing persons. **AIR-BLADDER**, a vesicle filled with air; among *fishes*, a long silvery fibrous tunic within the abdomen of fishes, which is filled with air, and by its contraction and dilatation they are enabled to rise or sink. **AIR-CELLS**, cavities in vegetable and animal structures filled

AIR—AIR-BEDS.

with air. **AIR-CHAMBER**, a large cell or cavity filled with air. **AIR GUN**, a musket or gun in which compressed air, instead of powder, is made the propelling agent. **AIR-HOLE**, an opening to admit or discharge air. **AIR-PIPE**, a pipe for the escape or supply of air. **AIR-PLANTS**, plants rooted on others, and suspended, as it were, in the air. **AIR-PUMP**, a machine for exhausting or pumping out the air from vessels. **AIR-SHAFT**, a passage for the free admission and circulation of air into mines and subterraneous excavations. **AIR-THERMOMETER**, a thermometer in which air is employed instead of mercury or spirits of wine. **AIR-VESSELS** or **AIR-SACS**, spiral ducts in plants containing air, analogous to lungs in animals. *Note*.—**AIR**, in the sense of 'tune or melody,' is derived from It. *aria*, through F. *air*, in the secondary signification of tune or song. Dr. Mackay derives *air* from Gael. *aireamh*, to number or compute.—**SYN.** of 'air, n.': manner; mien; demeanor; look; appearance; carriage.

AIR, or **ASBEN**, *ás-bén'*: kingdom in the n. of the Soudan. Agades (q.v.) is the cap., and residence of the sultan, but his power is in large measure merely nominal. The country is inhabited principally by three large tribes—the Kel-owi, the Kel-geres, and Itisan, each of which has numerous subdivisions. There are, besides, the Kel-n-Negarru, the Imghad, etc. The word *kel* means 'people,' but specially denotes *settled* people, not *nomads*: thus, Kel-owi is people settled in the valley of Owi. Many of the tribes and families live not in fixed dwellings, but in movable tents of mats. The valleys of A. are naturally rich, but are poorly cultivated. Food and clothing are imported. The population, which is very considerable, could not be sustained were it not for the salt-trade of Bilma, a town lying to the e. of A., in the Tebu country. Although the valleys of A. are in the region of the tropics, the climate is comparatively temperate. See Barth's *Travels in Central Africa*, vol. I.

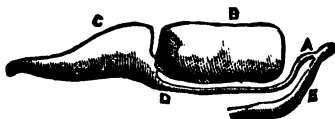
AIR: the compound of gases constituting the substance of our atmosphere. Formerly, all *aëriform* fluids were called 'airs,' but in this sense the word *gas* is now used. For the chief properties of air, and the phenomena that they give rise to, see **ATMOSPHERE**: **AÉRODYNAMICS**: **AÉROSTATICS**: **AIR-PUMP**: **BAROMETER**: **BALLOON**, etc.

AIR, in Music: see **ARIA**.

AIR-BEDS and **AIR-CUSHIONS**: valuable in many cases of sickness. Air-beds were known at the beginning of the 18th c., but being made of leather, were expensive. After the invention of air-tight or Macintosh cloth their cost became more moderate. An air-bed is a sack in the form of a mattress, divided into a number of air-tight compartments; a projection at one end forms a bolster. Each compartment has a valve, through which the air is blown in by a bellows. The advantages of such beds are cleanness, coolness, lightness, and elasticity. The *travelling-cushion* is another contrivance of the same kind. Recently vulcanized India-rubber has been used instead of cloth.

AIR-BLADDER—AIR-CELLS.

AIR-BLADDER, or SWIMMING-BLADDER, in Fishes: an organ apparently intended to aid in ascending in deep water, and for the accommodation of their specific gravity to various depths. It is made to serve this purpose by the increase or diminution of its volume, according to the degree of pressure exerted upon it by the ribs. Its place is in the abdomen, under the spine; and it is very various in size and form in different kinds of fishes. It usually has an opening into the œsophagus, or into the stomach, but apparently only for the ejection, not for the admission of air. In some fishes, it has no opening. The air with which the A. is filled appears to be the result of secretion; and in fresh-water fishes, consists in general almost entirely of nitrogen, but in sea-fishes contains a large proportion of oxygen, in deep-sea fishes amounting in some specimens to 87 per cent. The A. is in some fishes very small; in others, entirely wanting, particularly in fishes that are destined to live chiefly at the bottom of the water, as flat fishes, eels,



Air-Bladder of Carp:
Consisting of two parts—B and C, joined by a narrow neck;
A D, a canal communicating with œsophagus, E.

etc.; but there are remarkable instances of its absence also in species of very different habits, such as the common mackerel, while it exists in other species of the same genus or family. The A. of fishes affords the finest isinglass.

AIR-CELLS, or AIR-SACKS, in Birds: remarkable cavities connected with the respiratory system: distributed along



Lungs, etc., of Ostrich:
a a a a a, air-cells; b b, lungs;
c, heart; d, stomach;
e, intestines.

the inside of the whole cavity of the chest and abdomen; and in birds of strong wing and rapid flight, often send prolongations into the bones. They are connected with the extremely active respiratory system, and communicate with the lungs, giving an immense extension to the surface with which the air inhaled comes in contact. In the lungs of the mammalia, the cells into which air is conveyed by minute ramifications of the windpipe, in order to be brought into contact with the blood distributed on their walls, are very small; in man, only about one-hundredth part of an inch in diameter. See **BIRDS:**

RESPIRATION: and for the breathing apparatus of the lower forms of life, **GILLS.** Air-cells, or air-sacs, may be said to form the whole respiratory apparatus in some of the lower

AIR-CELLS—AIRDRIE.

kinds of animals (see ANNELIDA), while in others, higher in the scale of organization, particularly in insects, *air-tubes* arising from these ramify throughout the whole body. The air-tubes of insects are formed of a spiral fibre within a membranous coat, like the spiral vessels of plants, so that they have great elasticity.

AIR CELLS in Plants: cavities containing air in the stems or leaves. The orifices of the intercellular passages are closed up, so as to prevent the juices of the plant from entering them. They are very variable in size, figure, and arrangement, but are formed according to a uniform rule in each particular species in which they are found. They are large and numerous in many aquatic plants, evidently serving the purpose of buoying them up in the water. Besides A. of regular form, there are irregular cavities, also called by the same name, which seem to be formed by the tearing of the cellular tissue in the rapid growth of the plant, as in grasses and umbelliferous plants.

AIRD, *ard*, THOMAS: 1802–76; b. Bowden, Roxburghshire, Scotland: a poet. He studied at the schools in his native county, from which he passed to the Univ. of Edinburgh, and he made the friendship of many distinguished men, especially Prof. John Wilson, who was accustomed to speak of him in high terms. He edited (1835–64) *The Dumfriess Herald*, a new journal, started on Conservative principles. *The Devil's Dream*, his best-known poem, has a certain sublimity of conception, and much pathos. Whether the scenes are colossal, as in *The Devil's Dream*, or minute, as in *The Summer's Day*, there is the same clear, vigorous, and picturesque word-painting; but A.'s poetry has never become popular, and he did not fully realize the expectations raised by his early works. In 1827 he published *Religious Characteristics*, a piece of exalted prose-poetry; in 1845, the *Old Bachelor*, a volume of tales and sketches; in 1848, a collected edition of his poems—a second edition, 1856—and in 1852 he edited the select poems of David Macbeth Moir (the 'Delta' of *Blackwood*), prefixing a memoir for the benefit of Dr. Moir's family. See *Life and Poems* edited by J. Wallace (1878).

AIRDRIE, *âr'-drê*: flourishing town in Lanarkshire, 11 m. e. of Glasgow. The high-road between Edinburgh and Glasgow intersecting it, forms its principal street. It has risen rapidly, and is now one of the most flourishing inland towns in Scotland. Little more than a century ago it consisted of a solitary farm-house or two; but the abundance of iron and coal in the vicinity has given it a growth like that of an American city (see GARTSHERRIE). The Monkland canal and the Caledonian railway receive the produce of the coal pits and iron mines. The town has some neat buildings, is well paved, and lighted with gas. The weaving of cotton goods for the Glasgow manufacturers is carried on to a considerable extent, as is also the distillation of spirits, silk-weaving, and paper-making. It unites with Falkirk in sending a member to parliament. Pop. (1881) 13,363; with suburbs, 16,335.

AIRE—AIR-GUN.

AIRE or **AIRE-SUR-L'ADOUR**, *âr sûr-lâ-dôr'* (anc. *Vicus Julius*): a town of the dept. of Landes, France, on the left bank of the Adour, 76 m. s. from Bordeaux. It is a bishop's seat, and its cathedral, which has been often destroyed and rebuilt, is one of the most ancient in France. A. has been a place of consequence from the days of the Roman conquest of Gaul, and was the cap. of the Visigoths under Alaric, but is now much decayed, and diminishing in population. It has hat manufactories and tanneries. Pop. 3,000.

AIRE or **AIRE-SUR-LE-LYS**, *âr sûr-lâ-lès'*: town of the dept. of Pas-de-Calais, France, on the Lys, 30 m. s.e. from Calais. It is a fortress of the third class; the town well built, but its situation low and marshy. The barracks can contain 6,000 men. There are manufactures of woolen stuffs, linen yarn, thread, hats, starch, Dutch tiles, and soap; also some trade in grain. Osier-work is carried on to some extent. Pop. 5,000.

AIR-ENGINE: see **CALORIC ENGINE**.

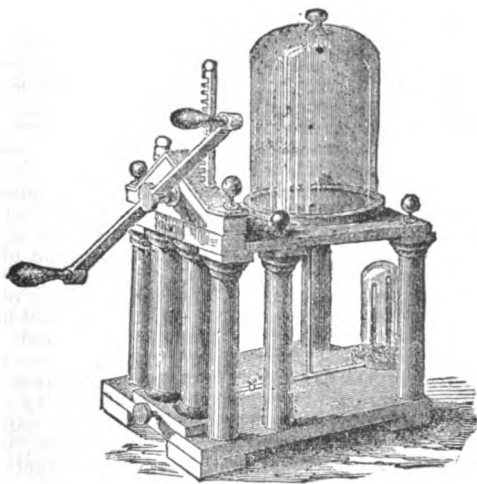
AIR-GUN: instrument for throwing bullets or other projectiles, by the force of compressed air instead of gunpowder. Various forms of construction have been adopted. The most usual plan is to insert a condensing syringe in the stock of the gun. The piston of this syringe is worked by an apparatus which passes through to the exterior of the gun; and this working causes a small body of air to be condensed into a chamber. The chamber has a valve opening into the barrel, just behind the place where the bullet is lodged. The gun is loaded from the muzzle, as ordinary muskets or fowling-pieces; and there is at that time just behind it a small body of highly compressed air, ready to rush out at any opening. This opportunity is afforded by a movement of the trigger, which opens the valve; the air rushes forth with such impetuosity as to propel the bullet. By a certain management of the trigger, two or three bullets, successively and separately introduced, can be thrown by one mass of condensed air. Another form of A. contains several bullets in a receptacle or channel under the barrel; by the movement of a cock or lever, one of these bullets can readily be shifted into the barrel; and thus several successive discharges can be made after one loading—on a principle somewhat analogous to that of the revolving pistol. Some varieties of A. have the condensing syringe detached, by which means a more powerful condensation of air may be produced; this done, the air-chamber is replaced in its proper position behind the bullet in the barrel. Those air-guns which present the external appearance of stout walking-sticks, and are thence called air-canes, have a chamber within the handle for containing condensed air, which can be unscrewed, and subjected to the action of the condensing syringe. One inventor has devised a form of A. with two barrels—one of small bore for the reception of the bullets, and another of larger bore for the reservoir of condensed air; the condensing syringe being within the stock of the gun. An attempt has more recently been made to combine the action of elastic springs with that of compressed air, in

AIR-PLANTS—AIR-PUMP.

an A. ; springs of gutta-percha, or of vulcanized India-rubber, are employed in substitution of, or in co-operation with, a condensing syringe. No form of A. hitherto made has had power enough to propel a bullet to any considerable distance; and therefore the instrument is scarcely available in war; there are, however, circumstances in which such an arm may be useful—seeing that there is no expense for gun-powder, no noise, no smoke, no unpleasant odor. The A. was known in France more than two centuries ago; and the ancients were acquainted with some kind of apparatus by which air was made to act upon the shorter arm of a lever, while the larger arm impelled a bullet.

AIR-PLANTS: see EPIPHYTES.

AIR-PUMP: instrument for removing the air from a vessel. The essential part is a hollow brass or glass cylinder, in which an air-tight piston is made to move up and down by a rod. From the bottom of the cylinder, a connecting tube leads to the space which is to be exhausted, which is usually formed by placing a bell-glass, called the receiver, with edges ground smooth, and smeared with lard, on a flat, smooth plate or table. When the piston is at the bottom of the barrel,



Air-pump.

and is then drawn up, it lifts out the air from the barrel, and a portion of the air under the receiver, by its own expansive force, passes through the connecting tube, and occupies the space below the piston, which would otherwise be a vacuum. The air in the receiver and barrel is thus *rarefied*. The piston is now forced down, and the effect of this is to close a valve placed at the mouth of the connecting tube, and opening inwards into the barrel. The air in the barrel is thus cut off from returning into the receiver, and, as it

AIRY.

becomes condensed, forces up a valve in the piston, which opens outwards, and thus escapes into the atmosphere. When the piston reaches the bottom, and begins to ascend again, this valve closes; and the same process is repeated as at the first ascent. Each stroke thus diminishes the quantity of air in the receiver; but from the nature of the process, it is evident that the exhaustion can never be complete. Even theoretically, there must always be a portion left, though that portion may be rendered less than any assignable quantity; and practically the process is limited by the elastic force of the remaining air being no longer sufficient to open the valves. The degree of rarefaction is indicated by a *gauge* on the principle of the barometer. By means of the partial vacuum formed by the A., a great many interesting experiments can be performed, illustrating the effects of atmospheric pressure, and other mechanical properties of gases. —The A. was invented by Otto Guericke (q.v.), 1654; and though many improvements and varieties of structure have been devised, the principle of all is the same. Two barrels are generally used, so as to double the effect of one stroke. In some air-pumps, stop-cocks turned by the hand take the place of valves; and in others, the entrance of the connecting tube into the cylinder is so contrived that the valve through the piston is not required.

AIRY, *ār'-ī*, Sir GEORGE BIDDELL, K.C.B., F.R.S.: b. Alnwick, 1801: Astronomer Royal, 1835 till his retirement, 1881. In 1819 he went to Trinity College, Cambridge; in 1822 he was elected Scholar; in 1823 he took the degree of B.A., with the honor of Senior Wrangler, and in 1826 that of M.A. In 1826 he was elevated to the chair of science founded by Lucas, which he rescued from the reproach of being a sinecure by delivering a course of public lectures on experimental philosophy. In 1828 he was made Plumian professor, and was intrusted with the management of the newly-erected Cambridge Observatory. On account of his severe and unintermitting labors, his income was augmented from the funds of the university. He published his observations (*Astronomical Observations*: Cambridge, 1829–38, 9 vols.), arranged in a clear and simple manner, and they have served as a model ever since for those of Greenwich and other observatories. In 1835 the office of Astronomer Royal became vacant, and A. was appointed to it by Lord Auckland, First Lord of the Admiralty. He has introduced new or more nearly perfect scientific instruments, more rapid methods of calculation, and researches in magnetism, meteorology, photography, etc. He contributed the well-known article on 'Gravitation,' to the *Penny Cyclopædia* (1837). Equally excellent and popular is his treatise on Trigonometry, written for the *Encyclopædia Metropolitana* (1855). He has deservedly obtained the reputation of being one of the most able and indefatigable of living savans. He served on the Royal Commission appointed in 1868 to inquire into the standard weights and measures. In 1869, he communicated to the Royal Astronomical Soc. a remarkable discovery on 'Atmospheric Chromatic Dispersion, as affecting Telescopic Observation, and the mode of correcting it.'

AISLE—AIX.

He became a Companion (civil) of the Bath in 1871, and a Knight Commander in 1872. A. is an F.R.S.; an Hon. Member of the Institution of Civil Engineers, Cor. Member of the French Institute, D.C.L. of Oxford, and LL.D. of Cambridge and Edinburgh.

AISLE, n. *il* [F. *aisle* or *aile*, a wing—from L. *alā*, a wing]: wing of a house; the side passages of a church—the middle passage is called the *nave*. **AISLED**, a. *ild*, having aisles.

AISLE: any lateral division of any part of a church, whether nave, choir, or transept. The number of aisles varies in the churches of different countries. In England there is only one on each side of the nave or choir; in most foreign countries there are usually two, and at Cologne there are even three. The continental edifices, it would seem, have antiquity in their favor for this arrangement. See **BASILICA**. The word is often incorrectly applied to the open space in the nave of churches between the seats of the congregation.



Aisle (Melrose Abbey).

AISNE, *ân*: tributary of the Oise, France; rises in the dept. of Meuse, and flows n.w. through the depts. of Marne and

Ardennes, and then w. through that of Aisne and part of Oise, where it falls into the river Oise, above Compiègne. Its course extends to 150 m., of which 70 are navigable.

AISNE: a dept. in the n. of France, formed of a part of ancient Picardy and the Isle of France. It belongs to the basin of the Seine, and is intersected by the river A., and by other navigable streams and canals. The soil is fertile; the chief culture is wheat, and other grain. Its rich meadows supply Paris with hay. Area, 2,880 sq. miles. It is the seat of considerable cotton and other manufactures, the centre of which is St. Quentin (q.v.), and at St. Gobin is the famous manufactory of mirrors. The dept. is divided into 5 arrondissements and 37 cantons. Pop. (1881) 552,988. The chief town is Laon (q.v.).

AIT, n. *ât* [a contr. of *eyot*—from *eye*, an island]: a small flat island in a river.

AIX, *âks*: town in France, formerly cap. of Provence, now the chief town of an arrondissement in the dept. of the Bouches-du-Rhône. It is believed to have been built by the Roman consul C. Sextius, B.C. 120, on account of the mineral springs in the neighborhood, and thence called *Aquæ Sextiæ*. A. is the seat of a court of appeal; and has an academy for theology and law, and a public library with nearly 100,000 vols., and 1,100 MSS. The baptistery of the

AIX.

cathedral is believed to have been originally a temple of Apollo. The numerous public fountains give the place a pleasant appearance: one has a sculpture of the Good King René, by David. There is also an old clock-tower, the machinery of which, when the clock strikes, sets various quaint-looking figures in motion. The industry of this again flourishing town consists chiefly in the cultivation of the olive, in cotton spinning, leather-dressing, and trade in oil, wine, almonds, etc. The warm springs are slightly sulphureous, with a temperature 90° to 100° F., clear and transparent as the purest well-water, almost free from smell, yet with a slightly bitter taste. They have the reputation of improving the beauty of the skin, and are on this account especially frequented by women. The field on which Marius defeated the Teutones lies in the plain between A. and Arles. In the middle ages, under the counts of Provence (see RÉNÉ), A. was long the literary capital of Southern Europe. Pop. (1881) 23,887.

AIX (*Aquæ Gratiæ Allobrogum*): small town of Savoy, in a delightful valley near Lake Bourget, seven m. n. from Chambéry. It was a much frequented bathing-place in the times of the Roman empire, and among its numerous remains of ancient times are the arch of Pomponius, the ruins of a temple and of a vaporarium. The king of Sardinia has a palace here. The hot springs, two in number, are of sulphureous quality, and of a temperature above 100° F. They are used both for drinking and as baths, and attract annually above 2,000 visitors. Pop. of A. about 3,000.

AIX-LA-CHAPELLE.

AIX-LA-CHAPELLE, *āks-lá-shá-pèl'* (Ger. **AACHEN**): cap. of a district in Rhenish Prussia. It is in a fertile hollow, surrounded by heights, and watered by the Wurm: n. lat. 50° 47', e. long. 6° 5'; pop. (1880) 85,551, of whom a very small proportion are Protestants. A. is the centre of numerous thriving manufactories, especially for spinning and weaving woollen fabrics, and for needle and pin-making. There are also immense manufactures of machinery, bells, glass buttons, chemicals, cigars, etc. As a principal station on the Belgian-Rhenish railways, A. is an important staple place of Prussian trade. The city is rich in historical associations. It emerges from historical obscurity about the time of Pepin, and Charlemagne established its world-wide celebrity. Whether it was the birthplace of Charlemagne, is doubtful, but it became his grave, 814. In 796, Charlemagne caused the palace, called the Imperial Palace, to be entirely rebuilt, as well as the chapel, in which Pepin had celebrated Christmas in 765. The two buildings were connected by a colonnade, which fell into ruins a short time before the emperor's death, probably from the effects of an earthquake. The present town-house has been built on the ruins of the palace; the chapel, after being destroyed by the Normans, was rebuilt on the ancient plan by Otho III., 983, and forms the nucleus of the present cathedral. This ancient cathedral is in the form of an octagon, which, with various additions round it, forms, on the outside, a sixteen-sided figure. In the middle of the octagon, a stone with the inscription 'CAROLO MAGNO,' marks the grave of Charlemagne. Otho III. opened the vault in 997. The body of the emperor was found in a wonderful state of preservation, seated upon a marble chair, dressed in his robes, his sceptre in his hand, the Gospel on his knee, a piece of the holy cross on his head, and a pilgrim's scrip attached to his girdle. Otho caused the tomb to be built up again, after repairing the injuries of the arch. In 1165, when the emperor Frederick I. caused the vault to be re-opened, the bones of the great emperor were enshrined in a casket of gold and silver, and a large and beautifully-wrought chandelier was hung up over the tomb as a memorial. In 1215 Frederick II. caused the remains of the emperor to be inclosed in a costly chest, in which they are yet kept in the sacristy. The marble chair was, in later times, overlaid with gold plates, and used till 1558 at the imperial coronations, as a throne for the newly-crowned emperor. The imperial insignia were removed to Vienna in 1795. In the 14th c., a choir in the Gothic style was added to the e. side of the octagon, which had been built in the Byzantine style; while on the w. side, a square belfry was joined to it, as well as two small round towers, with winding stairs leading to the treasury. Here are kept the so-called 'great relics,' which, once in seven years, in the month of July, are still shown to the people, from the gallery of the tower. This spectacle attracts many thousands of strangers. Much has of late years been done to restore this venerable pile. The columns brought by Charlemagne from the palace of the exarch at Ravenna, to decorate the interior of the octagon, had been carried off by

AIX-LA-CHAPELLE.

the French; and although part of them had been restored at the peace of Paris, they were not replaced in the building till recently.

The town-house—which incloses the remains of the Imperial Palace—adorns the market-place, having the Bell or Market Tower on the left, and on the right the Granus Tower, a memorial of old Roman times. The coronation-hall, 162 ft. long, 60 ft. wide, in the interior of the town-house, was, in the last c., divided in the middle by a wooden partition. This noble hall, in which thirty-five German emperors and fourteen empresses have been crowned, has been restored to its original form, and the walls have been lately decorated with large fresco-paintings of scenes from the life of Charlemagne, by Reihel. Before the town-house stands a beautiful fountain, with a bronze statue of Charlemagne. In the church of the Franciscans are to be seen a fine picture of the Taking Down of Christ from the Cross, by Vandyck, and two other pictures representing the Crucifixion, by A. Diepenbeeck. At a short distance from A., and surrounded by the river, stands Frankenburg, once the favorite abode of Charlemagne and of Fastrada, and rich in legends. It has been rebuilt from its romantic ruins. As a town A. has recently been much improved. It now has many fine buildings, among which are several large and splendid hotels. From being a quiet old city of historical interest, it has become a centre of manufacturing industry. In 1870, a new Polytechnic School was erected. A. was formerly noted for its gambling-tables; but these are no longer allowed.

The name of Aix or Aachen is evidently derived from the springs, for which the place has been always famous. See AA. The name Aquis Granum, which it received about the 8d c., may possibly be derived from Granus, one of the names of Apollo, who was worshiped by the Romans near springs. The French name, A., refers to the chapel of the palace. Charlemagne granted extraordinary privileges to this city. The citizens were exempted, in all parts of the empire, from personal and military service, from imprisonment, and from all taxes. The city also possessed the right of sanctuary: 'the air of A. made all free, even outlaws.' In the middle ages, this free imperial city (then included in the circle of Westphalia) contained more than 100,000 inhabitants; and held an important place among the confederated cities of the Rhine. The emperors were crowned in A. from Louis the Pious to Ferdinand I. (813–1531). Seventeen imperial diets and 11 provincial councils were held within its walls. The removal of the coronations to Frankfort, the religious contests of the 16th and 17th centuries, a great fire which in 1656 consumed about 4,000 houses in the city, combined with other causes to bring into decay this once flourishing community. In 1793, Jan., and again in 1794, A. was occupied by the French. By the treaties concluded at Campo Formio and Lunéville, it was formally ceded to France, and became the cap. of the department of Roer; at length, in 1815, the city fell to Prussia. See *Quier Geschichte der Stadt A.* (History of A.), 1841.

AIX-LA-CHAPELLE.

The **MINERAL SPRINGS** of A., of which six are hot, and two cold, were known in the time of Charlemagne, and were much frequented as early as 1170. The hot springs are strongly sulphurous, and contain also hydrochlorates. The temperature varies from 111°–136° F. They act chiefly on the liver, and on the mucous surfaces and skin, and are therefore efficacious in cases of gout, rheumatism, cutaneous diseases, etc. The most remarkable is the 'Emperor's Spring,' which rises in the middle of the Hôtel Kaiserbad. The baths themselves are from four to five ft. deep, and are built quite in the old Roman style. The cold springs are chalybeate, and not so copious. The new 'Eisenquelle' (iron spring), first discovered in 1829, is provided with an elegant bath-house. The well-proved medicinal virtues of the mineral springs of A. bring yearly to the city many thousands of strangers.

TREATIES OF PEACE, and CONGRESS OF A.—The first Peace of A. ended the war carried on between France and Spain for the possession of the Spanish Netherlands. On the death of Philip IV., Louis XIV. laid claim to a large portion of those territories in the name of his wife, Maria Theresa, the daughter of Philip, urging the law of succession prevailing in Brabant and Namur respecting private property. The victorious progress of Louis was checked by the triple alliance between England, Holland, and Sweden; and a treaty of peace was concluded at A. in 1668, by which France retained possession of the fortresses of Charleroi, Lille, etc., which she had already taken.

The second Peace of A. concluded the war respecting the succession of Maria Theresa to the empire. See **SUCCESSION, WARS OF**. After the war had been carried on with various success for eight years, peace was concluded in 1748. In general, the possessions of the several states remained as before the war. Austria ceded Parma and Placentia to the Spanish infante, Philip; and the possession of Sillesia was guaranteed to Prussia. The privilege of the Assiento Treaty (q.v.) was anew confirmed to England for four years, and the pretender was expelled from France. Owing chiefly to the exertions of her minister, Kaunitz, Austria came off with but small sacrifice, while England, notwithstanding her splendid victories, derived little solid advantage, and was left with a debt raised to £80,000,000.

The Congress of A. was held in 1818, for regulating the affairs of Europe after the war. It began on the 30th Sept., and ended Nov. 21. Its principal object was the withdrawal from France of the army of occupation, 150,000 strong, as well as the receiving of France again into the alliance of the Great Powers. The emperors of Russia and Austria, and the king of Prussia, were personally present. The plenipotentiaries were Metternich, Castlereagh, and Wellington, Hardenberg and Bernstorff, Nesselrode and Capo d'Istrias, with Richelieu on the part of France. France having engaged to complete the payment of the stipulated sums of money, was admitted to take part in the deliberations, and the five great powers assembled, signed a protocol

AJACCIO—AJMEER.

announcing a policy, known as that of the 'Holy Alliance' (q.v.)

AJACCIO, *á-yát'chô*: chief town of the island of Corsica, which forms a dept. of France. The chief employments are the anchovy and pearl fisheries, and the trade in wine and olive oil, which the neighborhood produces in abundance, and of good quality. The harbor is protected by a strong fort. A. is remarkable as the birthplace of Napoleon; the house is still to be seen. Pop. (1881) 17,327.

AJAN, *á-zhân'*: a portion of the e. coast of Africa, extending from Cape Guardafui nearly to the equator.

AJAR, ad. *ájár'* [Scot. *on char*; AS. *on cyrré*, to a side, on the turn: AS. *ceorran*, to turn: Swiss, *achar*, ajar]: a little opened; half open.

AJAX, *á-jaks*: name of two of the Greek heroes of the Trojan war. One of them was called A. the Less, or the Locrian, being the son of Oileus, king of the Locrians. At the head of forty Locrian ships, he sailed against Troy, and was one of the bravest of the Greek heroes; in swiftness of foot he excelled all except Achilles. When Cassandra fled to the temple of Minerva, after the taking of Troy, it is said that A. tore her from it by force, and dragged her away captive. Other legends are to the effect that he even violated the prophetess in the temple. Though he exculpated himself by an oath when accused of this crime by Ulysses, yet he did not escape the vengeance of the goddess, who caused him to be engulfed in the waves.

The other A., called by the Greeks the Greater, was the son of Telamon, king of Salamis, and, by his mother's side, a grandson of Æacus. He sailed against Troy with twelve ships, and is represented by Homer as, next to Achilles, the bravest and handsomest of the Greeks. After the death of Achilles, A. and Ulysses contended for the arms of the hero, and the prize was adjudged to Ulysses, which threw A. into such a state of rage and despair that he killed himself with his sword. This melancholy fate is the subject of one of the extant tragedies of Sophocles.

AJMEER, *áj-mēr'*: one of the districts of Hindustan, directly under the government of India, lat. 25° 43'–26° 42'; long. 74° 22'–75° 33'. Its length from s.e. to n.w. is about 80 m.; breadth, 50; 2,661 sq. miles. The surface towards the s.e. is generally level. In the n., n.w., and w., it is broken by mountains and hills of the Aravulli range. The mountain of Taragurh, above the city of Ajmeer, contains carbonate of lead, manganese, copper, and abundance of iron ore. The general elevation of the plain of A. is about 2,000 ft., and the frosts in the winter are sometimes severe. Strong breezes are prevalent, and the climate on the whole is healthy. The scarcity of water, however, often occasions great distress. The only permanent stream is the Koree, the water of which is so impregnated with mineral salts as to be unfit for drink except during the rains. To compensate for this deficiency, water-tanks are numerous. The staple crop is bajra (*Holcus spicatus*). Sheep are reared in great numbers, and wool is cheap, affording the material of

AJMEER—AKBAR.

clothing to the lower orders. Among the more prevalent diseases are small-pox and ophthalmia. The present limits of this district do not correspond to its former importance. In the 12th c., at the time of the Mussulman invasion, the sultan of A. and Delhi was the most powerful monarch in India. Under Akbar also, who acquired this territory in 1559, A. was a large and important province. It afterwards fell into the hands of the Mahrattas, from whom it was wrested by the British in 1817. The principal race of inhabitants are the Rajpoots, conquerors of the native Bheels, Mhairs, and Neenas. Pop. (1881) 460,722; of whom about 40,000 are Mussulmans, etc., the rest Hindus.

AJMEER: ancient city of Hindustan, cap. of the British district of A., 228 m. w. from Agra, in a picturesque and rocky valley, at the foot of the mountain of Taragurh, which is crowned by a fort, formerly strong, now dismantled. The city is surrounded by a stone wall, with five lofty and handsome gateways on the w. and n. Most of the streets are narrow and dirty, but some of them are spacious, and contain many fine residences, besides several mosques and temples of very massive architecture. A. is the seat of a British political agency, a medical school, and an English and Oriental school. The tomb of the Mussulman saint, Kwajah, within the town, is held in great veneration, and pilgrimages are made to it even by Hindus. The emperor Akbar journeyed to it from Agra on foot in 1570, in fulfilment of a vow after the visit of his son Jchanghir. In Oct., a great annual fair is held in honor of the saint, at which ridiculous miracles are pretended to be wrought. Pop. (1871), 34,763.

AJURUOCA, á-zhó-rô-ô'ká: town of the province of Minas Geraes, Brazil, 100 m. n.w. from Rio de Janeiro, in a fertile country at the n. base of the Sierra Mantiqueira, on the river Ajuruoca, one of the head waters of the Parana. The surrounding district formerly yielded much gold, which has apparently been exhausted; but it produces excellent crops of tobacco, millet, mandioc, sugar, and coffee. Swine are reared for the market of Rio de Janeiro. Pop. (including dist.) about 12,000.

AKABAH, GULF OF: see RED SEA.

AKBAR, ák'bér (i.e., 'Very Great'), properly **JELAL-ED-DIN-MOHAMMED**, Emperor of Hindustan: 1542-1605: the greatest Asiatic monarch of modern times. His father, Humayun, was deprived of the throne by usurpers, and took refuge in Persia; and on the way thither, in the town of Amerkote, A. was born. Humayun recovered the throne of Delhi after an exile of 12 years; but died within a year. The young prince at first committed the administration to a regent-minister; but finding his authority degenerating into tyranny, he, by a bold stroke, shook it off, and took the power into his own hands, 1558. At this time, only a few of the many provinces once subdued by the Mongol invaders were actually subject to the throne of Delhi; in ten or twelve years, A.'s empire embraced the whole of Hindustan s. of the Deccan; but although great in subduing, A. was yet greater

AKBARPUR—AKENSIDE.

in ruling. The wisdom, vigor, and humanity with which he organized and administered his vast dominions, are unexampled in the east. He promoted commerce by constructing roads, establishing a uniform system of weights and measures, and a vigorous police. He exercised the utmost vigilance over his viceroys of provinces and other officers, to see that no extortion was practiced, and that justice was impartially administered to all classes of his subjects. For the adjustment of taxation, the lands were accurately measured, and the statistics taken, not only of the population, but of the resources of each province. For a Mohammedan, the tolerance with which he treated other religions was wonderful. He was fond of inquiries as to religious beliefs; and Portuguese missionaries from Goa were sent at his request to give him an account of the Christian faith. He even attempted to promulgate a new religion of his own, which, however, never took root. Literature received great encouragement. Schools were established for the education both of Hindus and Mohammedans; and numbers of Hindu works were translated from Sanscrit into Persian. Abu-l-Fazl, the able minister of A., has left a valuable history of his master's reign, entitled *Akbar-nameh* (History of A.); the third vol., containing a description of A.'s empire, derived from the statistical inquiries above mentioned, and entitled *Ayin-i-Akbari* (Institutes of A.), has been translated into English by Gladwin (3 vols., Calcutta, 1786; and London, 1800). A.'s latter days were embittered by the death of two of his sons from dissipation, and the rebellious conduct of the third, Selim (known as Jehanghir), who succeeded his father at his death.

AKBARPUR, *ák'bér-pór'*: a town of India, in the British dist. of Cawnpore, 28 m. w. from Cawnpore, on the route from Cawnpore to Etawa. It is the capital of a pergunnah of the same name. Pop. 6,830.

AKE, n. *ák*: another spelling of ACHE, which see.

AKEE, *á-ke'* (*Cupania Blighia sapida*): fruit tree belonging to the natural order *Sapindaceæ* (q.v.), native of Guinea, introduced into Jamaica in the end of last century. It grows to the height of 20–25 ft. or upwards, with numerous branches and alternate pinnate leaves, resembling those of the ash. The flowers are small, white, on axillary racemes; the fruit is about the size of a goose's egg, with three cells and three seeds, and its succulent aril has a grateful subacid flavor. The fruit is little inferior to a nectarine. Boiled down with sugar and cinnamon, it is used as a remedy for diarrhea. The distilled water of the flowers is used by negro women as a cosmetic. The A. sometimes produces fruit in hot-houses in Britain, but to obtain this, the roots should be cramped in pots.—The AKI of New Zealand is a totally different plant, *Metrosideros buxifolia*, of the natural order *Myrtaceæ*, a shrub, which sends out lateral roots, and so attains the summits of the loftiest trees.

À KEMPIS, THOMAS: see KEMPIS, THOMAS À.

AKENSIDE, *á-kèn-sid*, MARK: 1721–70; b. Newcastle-on-Tyne, where his father was a butcher; d. London: author

AKETON—AKHLAT.

of the didactic poem, *The Pleasures of the Imagination*, and some medical works. Being intended for the Presbyterian ministry, he was sent to study theology at Edinburgh, but soon abandoned it for the study of medicine. He graduated as a physician at Leyden in 1744, and practiced at Northampton, then at Hampstead, and finally in London. His success as a practicing physician was not great, owing, it is said, to his haughty and pedantic manner. At Leyden, he had formed an intimacy with Jeremiah Dyson, and this rich and generous friend allowed him £300 a year. His later poetry, consisting chiefly of odes and hymns, did not attain the same reputation as his *Pleasures of the Imagination*, written in his 23d year. Dyson published his poetic works, 1772, and another edition appeared, 1807. In *Peregrine Pickle*, Smollett has satirically sketched the character of A., under that of the pedant who undertakes to give an entertainment after the manner of the ancients. A. has little originality of conception, or even of expression; the reader is carried along for a time by the evident enthusiasm of the poet, and rapid and stately march of lofty images and ideas; but, as it has been well expressed, 'all is operose, cumbrous, and cloudy, with abundance of gay coloring and well-sounding words, but filling the eye oftener than the imagination, and the ear oftener than either.' A. became dissatisfied with his juvenile production, and at his death, had written a portion of a new poem on the same subject. Both poems were published in the complete edition of his works, London, 1773. His life has been written by Bucke: *Life, Writings, and Genius of A.* (8vo, Lond. 1832).

AKETON, *āk'tōn*: a name for a portion of armor used in the feudal times, called the Gambeson (q.v.).

AKHALZIKH, *ā-kāl-zēk'*, or **AKISKA**, *ā-kis'kā*: town of Russian Armenia, 90 m. w. from Tiflis, on the left bank of the Dalka, an affluent of the Kur. It is in a valley of the Keldir mountains, at such an elevation above the sea, that the winter is severe, although the summer is very hot. A. was anciently called Keldir or Chaldir. It is without walls, but has a strong citadel on a rock. The mosque of Sultan Ahmed, built on the model of St. Sophia, in Constantinople, has a library which was accounted one of the most valuable in the east; but the Russians, after acquiring possession of A., carried off great part of its most valuable treasures to St. Petersburg. Maize, wheat, barley, flax, cotton, silk, grapes, figs, and honey are produced in the surrounding district. The town has some manufactures, and an active trade with various places on the Black Sea. Pop. about 15,000, two-thirds of whom are Armenians.

AK-HISSAR, *āk'hīs-sār'* (anc. *Thyatira*): town of Asia Minor, in Anatolia, 52 m. n.e. from Smyrna, on somewhat elevated ground in the valley of the Hyllus. The streets are paved with carved stone, and other relics of antiquity abound; but there are no ruins of ancient buildings. Cotton goods are exported. Pop. estimated 10,000, of whom two-thirds are Turks, the remainder mostly Greeks.

AKHLAT, *āk-lāt'*, or **ARDISH**, *ar-dīsh'*: town of Asiatic

AKHTYRKA—AKRON.

Turkey, in the vilayet of Van, and 58 m. n.w. from Van. It is on the n.w. shore of Lake Van, and surrounded by a double wall and moat, and further protected by towers and a citadel. The old city of A., at a little distance from the present town in a ravine, was the residence of the kings of Armenia, and the scene of many conflicts between the Greeks, Armenians, and Persians. It was taken and devastated in 1228 by Jelal-ud-deen, and completely destroyed by an earthquake in 1246. Pop. estimated 6,000.

AKHTYRKA, *āk-tēr'ká*: a town of European Russia, in the govt. of Kharkov, 58 m. n.w. from Kharkov, on the small river A., an affluent of the Dnieper. It was founded by the Poles in 1641. It has manufactures of light textile fabrics, and a great annual fair. The neighborhood is very fertile. Pop. (1880), 17,820.

AKIMBO, a. *āk-kīm'bō* [AS. *a*, at or on; W. *cam*; It. *aghembo*, crooked, athwart; Gr. *skambos*, crooked, bow-legged]: arched; crooked; bent.

AKIN, a. *āk-kīn'* [AS. *a* for *of*, and *cyn*, family]: of kin or near kin; related to by blood; having the same properties.

AL [L.]: a prefix, being another form of *ad*, signifying to': in *Ar.* AL, with its form EL, signifies *the*.

AKJERMANN, *āk'yér-mán'*, or AKKERMANN, *ā'kér-mán'*: town of Russia, in Bessarabia, on the Black Sea, at the mouth of the Dniester, with a citadel and harbor. It is the Alba Julia of the Romans; and called, by the Poles, Białogrod, which, as well as A., signifies the *white town*. It is of some importance, on account of its harbor, fortifications, commerce, and especially its extensive salt pits. Pop. (1880), 28,944.

The Treaty supplementary of that of Bucharest (1812) concluded at A. in 1826, between Russia and Turkey, secured to Russia the free navigation of the Black Sea, and indemnification for losses sustained by her subjects from the Barbary corsairs; the institution of *divans* in Moldavia and Wallachia, and the power of re-electing the *hospodars* after their term of office; and the restoration of the privileges of Serbia, in which Turkish troops were only to retain possession of the fortresses. The boundaries in Asia were to remain as they then stood, Russia consequently retaining the Turkish fortresses of which she had gained possession. The non-fulfilment of this treaty on the part of the Porte occasioned the war of 1828, terminated by the peace of Adrianople.

AKRON, *āk-rón*: a city, cap. of Summit co., Ohio; on the Ohio and Erie canal at its junction with the Penn. and Ohio canal, and on the Atlantic and Great Western railroad where it crosses the Cleveland, Mount Vernon and Delaware railroad. It is at the highest point of the Ohio and Erie canal, 400 ft. above the level of Lake Erie, 40 m. s. by e. of Cleveland, and 246 m. n.e. from Cincinnati. A. is a beautiful and enterprising city, in the midst of a fertile country. It is amply supplied with water-power, from the canal and the Little Cuyahoga river, and its manufactures and trade are extensive and increasing. Im-

AKSHEHR—AKYAB.

mense beds of mineral fire-proof paint are found in the vicinity, and this, with wheat, is the chief article of export. The manufactures include agricultural implements, iron castings, canal-boats, machinery, stoneware, flour, cutlery and edge-tools, stoves, woolen factories, rubber works, etc. The city contains three national banks, two daily and three weekly newspapers, a public library, a high school, and 16 churches. It is the seat of Buchtel College (universalist) founded in 1872, and having eight resident professors. Coal is mined near the city, and its facilities for the prosecution of manufacturing and other business are, in many respects, exceptionally good. Then there are a manufactory of gas, two paper-mills, two manufactories of reapers and mowers, a rolling-mill, several foundries, carriage-factories, etc. It was founded 1825, and made the cap. of the co. 1841. Pop. (1860), 3,477; (1870) 10,006; (1880) 16,512.

AKSHEHR, *ák-shě'hr'* [*White City*, anc. *Philomelion*]: city of Asiatic Turkey, in the pashalic of Karaman, 5 m. s. of the salt lake of Akshehr, at the entrance of an extensive mountain valley. The houses rise in successive terraces on the slope of a hill. There is here a celebrated carpet manufactory. Pop. estimated 6,000.

AK-SU, *ák-só'*: town of eastern Turkestan, 260 m. n.e. from Yarkand, on an affluent of the Tarim, and on the s. base of the Thian-shan mountains. It was formerly the residence of the kings of Kashgar and Yarkand. While eastern Turkestan formed part of the Chinese Empire, it was an important garrison town. In 1867, it was captured by the Atalik-Gkazee. In 1716, it was nearly destroyed by an earthquake, and in the beginning of the present c., suffered terribly from an inundation. It is celebrated for its manufactures of cotton cloth and saddlery. It is much resorted to by caravans, as an entrepôt of commerce between Russia, Tartary, and China. Sheep and cattle are extensively reared in the neighborhood. Pop. variously estimated from 6,000 to 20,000 and upwards. See **TURKESTAN**, **EASTERN**.

AKYAB, *ák-yáb'*: town of Farther India, chief seaport of the dist. of Akyab or Aracan Proper, cap. of the province of Aracan. It was formerly called Twet-twe, and sometimes still receives that name. It is on the e. side of the island of Akyab, at the mouth of the Kuladyne or Coladyne. The houses are well built, the streets broad and regular. The town is rapidly rising in importance. Light-houses have been erected. Pop. 20,000.—The **DISTRICT** of **A.** has 5,535 sq. m.; pop. (1881) 359,706.

ALABAMA.

ALABAMA, *ăi-ă-bă'mă*: one of the United States of N. Amer.: first known to Europeans, 1541, half a c. after the discovery of America. The celebrated exploring expedition of De Soto had to fight its way fiercely through the tribes who peopled its wilds at that period, and who were much less savage and far more numerous than the northern aborigines. In one instance, a chief's house measured 120 by 40 ft., and included small buildings like offices. Upon the Savannah river, at Silver Bluff, there was found a remarkable temple, 100 ft. long, 40 ft. wide and proportionably high. In the beginning of the 18th c., the French built a fort on the Mobile Bay, but the city of Mobile was not commenced till nine years later (1711). In 1763, when the entire French possessions e. of the Mississippi (except New Orleans) fell into the hands of the English, A. was incorporated first with Georgia; afterwards, 1802, with the Mississippi territory; but finally, in 1819, it was admitted to the Union as a state, and now ranks fourth in population among the Southern states.

A. forms nearly a rectangle, widening a little towards the s.e. and s.w.; but Florida, by a projection westward, occupies fully three-fourths of what would have been A.'s coast-line. A. is between 30° 10' and 35° n. lat., and between 85° and 88° 30' w. long.; about 330 m. in extreme length from n. to s., and 300 m. in breadth; 50,250 sq. m., or 33,440,000 acres, only 6,375,700 of which, rather less than one-fifth, were improved in 1880. The country is neither mountainous nor level, but rugged and broken, especially in the centre, with many picturesque views and wild romantic gorges. The Alleghanies terminate in the n. in a series of elevated hills, and the ground gradually slopes to within less than 100 m. of the Gulf of Mexico, when it becomes level. There are three bays in A., the principal of which is Mobile Bay, stretching n. for about 30 m. There are also three large rivers—the Tennessee, the Tombigbee, and the A. the first of which only makes a sweep into the state at the n.e. angle, and then another sweep out at the n.w.; the second comes into A. from Mississippi receives an affluent (Black Warrior) and flows due s., until it is joined by the A., flowing s.w. out of Georgia. After the union, the river is called the Mobile, and discharges its waters into the Gulf of Mexico. The Tombigbee is about 500 m. in length, navigable for steamboats through its entire course in Alabama. The A. is about 600 m. long, and may be ascended in steamboats to Wetumpka (on the Coosa branch), 460 m. from the gulf; but the navigation of the Tennessee, which has 130 m. of its course in A., is obstructed by the Muscle-shoals, a series of rapids. The climate in this state is almost tropical, as it reaches to within 7° of the torrid zone, and its productions are allied to those of the tropics. The thermometer ranges from 60° to 104° F. in summer, and in winter from 82° to 18°; the mean temperature of the year being about 63°. The heat rarely passes 95°. The lowlands are very unhealthy, near the rivers and muscle-shoals, but the hilly regions are salubrious. The soil is exuberantly fertile; the cotton crop of A. in 1880 came next

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in value to those of Mississippi, Georgia and Texas. There are fine grazing-lands in the low hills of the n., where the Alleghanies terminate, and the long flat valleys between them are extremely rich. The central part is a great-broken, and swelling prairie, remarkably fertile; while the southern, though often sandy and inferior in productive-ness, has many fertile alluvial bottoms, which yield rice. Besides cotton, A. produces large quantities of Indian corn, oats, sweet potatoes, and butter; a considerable amount of wheat, rye, rice, wool, hay, pease, beans, potatoes, fruits, market-vegetables, and sugar; also, some tobacco, barley, buckwheat, wine, cheese, grass-seeds, hops, flax, and silk. There is abundance of wild deer and turkeys; and wild geese and ducks frequent the muscle-shoals of the Tennessee in immense numbers. Bears, wolves, and foxes are still met with. The trees, like the animals, are numerous, but not remarkably varied. In the centre and n., there are oak, poplar, hickory, chestnut, and mulberry; in the s., cypress and loblolly; pine is also abundant s. of the mountains. A. is very rich in mineral treasures, particularly in coal, iron, limestone, and marble. Red ochre, lead, and manganese are also found. A vein of bituminous coal of superior quality runs eastward from Tuscaloosa into Georgia. There are, in various sections of the state, salt, sulphur, and chalybeate springs. At Blount's Springs, a fashionable watering-place, there are several different varieties of sulphur waters. A gold-mine was also wrought for a short time in St. Clair co., while the statuary granite of A. is admitted to be of the best in the United States.

The state receipts for the year ending 1882, Oct., were \$1,012,547; the state debt in that year, \$12,153,723. In 1880, 18,855,334 acres of land in A. were in farms, averaging 222 acres in size, with a live-stock valued at \$23,787,681, and products worth \$56,872,994. In 1880, there were in the state 2,070 manufacturing establishments, which produced goods to the value of \$13,565,504. The most important manufactures were those for flouring-mill products and cotton goods: 1,060 looms, 55,072 spindles, and about 15,000 persons being employed in the manufacture of the latter in 1880. Among the other manufactures are machinery, iron, sawed lumber, carriages, and wagons, besides the 'neighborhood industries' of boot and shoe making, blacksmith's work, carpentering, etc.

In 1880, there were in A. 2,086 m. of railroad completed, and several hundred m. in course of construction. The commerce of A. is very extensive; for the steamboat navigation on its rivers (1,500 m. in all) affords an outlet not only for its own productions, but also for those of Mississippi and Georgia.

Education is advancing in A. In 1880 there were 12 colleges, over 3,000 schools for whites, and 1,452 for colored; common and high schools are on the increase. The number of pupils at school in 1880 was above 159,000. The annual income of the state university, located at Tuscaloosa, is \$15,000. The newspaper and periodical literature is prolific; there are 130 publications of different kinds. The

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annual number of copies issued is near 10,000,000, with a circulation of 90,000; of which the daily papers have 20,000, and the weekly 70,000. Religious denominations exhibit a similar fecundity; but the Baptists and Methodists have a vast preponderance over the others. There are various public institutions in A., such as a lunatic asylum at Tuscaloosa, a blind asylum at Mobile, a deaf-and-dumb asylum, and a state penitentiary at Wetumpka. The buildings of A. Univ. cost \$150,000. In 1870 there were 298 libraries, with 86,577 volumes, in the state.

A. was one of the slave states. Its government resembles that of the other states in its general features. The senate consists of 33 members, elected for 4 years; and the house of representatives of 100, elected for 2 years, both by the people. The judiciary consists of a supreme court, a court of chancery, nine circuit courts, and the city court of Mobile. The preponderance of the farming interests is remarkable, though, of course, natural, and even inevitable. While grocers, shoemakers, engineers, wheelwrights, masons, etc., are reckoned only by the hundred, there are upwards of 66,000 farmers—that is, more than eight times the number of persons employed in manufacturing establishments throughout the state. After the war the government was for a time provisional, until in 1868 A. acceded to the demands of congress, and the direction of state affairs was restored to the civil powers. Pop. (1870) 996,992; (1880) 1,262,794, of whom 661,986 white, 600,358 colored. The commercial metropolis is Mobile, pop. (1880) 31,205; but the state metropolis is Montgomery, pop. 16,713. The other chief towns are Selma, Huntsville, and Marion.

ALABAMA, THE: an armed vessel of the Confederate States of America, which inflicted terrible injury upon the shipping of the Northern States of the American Union during the civil war which broke out in 1861. The career of the A. was in more than one respect unparalleled in the history of any previous naval war. She was, for a war-ship, a small vessel, built for speed, carrying a few guns, and intended not for fighting, but for preying upon defenseless merchant-ships. She was almost the only vessel the Confederate States had upon the open seas; but the destruction she wrought was so great, and in effect so alarming, as to produce a very marked diminution in the number of commercial vessels carrying the flag of the United States. She was built, too, in a British port, and never at any time entered a port of the state by which she was commissioned: there was no port available for the disposal of her prizes, which therefore, ship and cargo, were usually burned. Her career showed how completely, in the present state of commerce, under the conditions of navigation and naval warfare produced by steam and long-range artillery, belligerents fairly matched might ruin each other at sea; and it raised international questions between the United States and Great Britain which more than once threatened the gravest consequences to both nations. Even the end of the A. was singular and instructive: perhaps it was too honorable an end for such a career as hers. She went down in an artil-

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lery duel, quixotically entered upon for a fancied point of honor, with a vessel partially protected by armor, illustrating the impotence, in modern naval warfare, of the gallantry of the most gallant of seamen against the advantages of speed, armament, and armor.

At the beginning of the civil war in 1861 the Confederate States were without a navy, and apparently without the means of acquiring one. Their population was agricultural; they had neither ships nor seamen, and the Northern States promptly instituted an effective blockade of nearly all their ports. The able men who had planned the secession of the Southern States from the American Union had not overlooked the subject of a navy; but events had been against them. They had reckoned upon securing a part of the United States fleet; and before the war commenced they had determined upon fitting out small and swift vessels, carrying a few heavy guns, to cruise against the Northern commerce. They had no lack of able naval officers, for a majority of the senior naval officers of the United States were Southern men, and were at their command. Early in 1861, while parleying was still going on between the North and the South, and hopes of a peaceable separation were not extinct, Capt. Raphael Semmes had been empowered by the Southern leaders to purchase ships and stores for the South; but as regards ships, Capt. Semmes appears to have been unsuccessful. It was not till several months after the war began, in June, 1861, that the Confederate States were able to send their first armed cruiser to sea. This was the *Sumter*, a small steamer, which had previously traded between New Orleans and Havana. Capt. Semmes, who was appointed her commander, was singularly qualified for the work expected of him. He was a native of Maryland, about 51 years of age; he had been a commander in the United States navy, and now held the same rank in the service of the Southern States. Besides possessing high professional abilities and attainments, he was a man of acute intellect and of decided character, and he was thoroughly instructed in the principles and details of international law and etiquette. He seems to have united with the good qualities of a naval officer the qualifications of an able lawyer, diplomatist, and publicist. He could be trusted to secure for a war-vessel of the Confederacy, however small, every advantage to which she was entitled from neutral powers; to give to subjects of neutral powers, and of the other belligerent alike, nothing which was not strictly their due; to carry out without flinching, unmoved by taunts and abuse, the work of destruction which was expected at his hands. His career in the *Sumter* is a record of triumphs won over neutral governors and ministers, who were disinclined to admit the little *Sumter* to the position of a belligerent war-vessel; of clever avoidance of the enemy's cruisers, of which several were always on his track, and of the destruction of valuable ships and cargoes belonging to citizens of the United States. The *Sumter* and her captain were soon known throughout the world. The enemy called Capt. Semmes a pirate, and could they have caught him, would probably have treated

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him as a pirate. But he appears to have done nothing but what it was his right as a belligerent to do; at any rate, he was scrupulous not to exceed the precedents of international law. It was upon his system of burning his captures, not upon the captures themselves, that the people of the Northern States founded their charge of piracy; but no Confederate port was open to him for the disposal of his prizes, and his treatment of them, though it greatly shocked an age which had seen scarcely anything of naval warfare, was warranted by precedents, and was probably, though not unquestionably, within his technical right. As an occasional resource, to be adopted upon an emergency, the burning of captures made at sea is undoubtedly lawful; it is not so certain that a belligerent is at liberty to carry out a *system* of burning captures, made without the hope of being able to bring them into port for adjudication before a prize court. The cruise of the *Sumter*, which began 1861, June 30, with her escape from New Orleans, then strictly blockaded, was over before the end of the year; but she had captured 18 vessels, had spread alarm through the Northern seaports, and had put shipowners and merchants to heavy charges for insurance, and by disinclining merchants to ship their goods in Northern vessels, had seriously injured the shipping-trade of the Northern States. Eventually, she was laid up at Gibraltar, and declared unfit for further service: had she been seaworthy, it would have been very difficult to carry her out of a port where she was diligently watched by Northern cruisers. She had, however, verified the anticipations of the Confederate government, and in 1862 this government found a successor for her, much better fitted for the work to be done, and destined to far greater celebrity. This was the *Alabama*.

This vessel, built for the Confederate government by Messrs. Laird & Sons at Birkenhead, England, was a screw steam-sloop, 1,040 tons register, built of wood, and for speed rather than strength. She was bark-rigged, and fitted with two engines of 350 horse-power each; she was pierced for 12 guns, and had the means of carrying two heavy pivot-guns amidships. She cost £47,500 without her equipment; including her equipment, £51,716. Semmes, then a captain in the Confederate service, was, 1862, June, appointed to superintend her equipment, and take command of her when ready for sea. Both Capt. Semmes and Commander Bullock, who had superintended the building, were enjoined by the Confederate government to keep the destination of the vessel as secret as possible, and carefully to avoid any infringement of public law, or of the municipal law of Great Britain, which would give the British government a pretext for seizing her. These instructions were carefully acted upon. The destination of the 'No. 290,' as she was called from her number in the list of steamships constructed by the Messrs. Laird, was so well concealed, that she was nearly finished before it was suspected by the emissaries of the United States. According to previous practice, there was no great difficulty in avoiding the infringement of the public and of the municipal law in such a case. It had

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been held lawful to build vessels for a belligerent in neutral ports, and lawful to purchase guns and stores in neutral ports, though they might be for the equipment of vessels thus built. What had been held unlawful was the equipment with guns and warlike stores of a vessel built for a belligerent in a neutral port previous to her leaving the neutral jurisdiction. Capt. Semmes did not intend to equip his vessel at Birkenhead, and therefore, supposing the rules of public law to have remained unchanged, he intended no infringement of the law. But the United States minister called upon the British government to detain the 'No. 290,' submitting some evidence that she was intended for a Confederate war-vessel. He maintained, or it has since been maintained on the part of the United States, that her construction, being that of a war-vessel, was so different from that of vessels built for trade, as itself in some measure to constitute an equipment for war. The British government consulted the crown lawyers, who at first thought the evidence of destination insufficient. Afterwards, when further evidence was presented, a delay was caused by the illness of Sir John Harding, the queen's advocate. When an opinion favorable to the detention of the vessel was at length given, 'No. 290' was gone. The builders, made aware of the danger of a seizure, had made haste with their work; the vessel, though unfinished, was made ready for sea. Under pretence of a trial trip, she made her way down the Mersey to Moelfra Bay, where the work remaining to be done was actively carried on; and on the morning of July 31, 1862, warning having been given that she was to be seized that day, the 'No. 290' steamed away from the British coast. The ablest English lawyers were of opinion that there had been no infringement of the law, but that a case had been presented which the British government was bound to submit to a court of law. The detention of the vessel during a protracted lawsuit would have served the purposes of the United States almost as well as her condemnation; and as she must have been detained but for the delay caused by Sir J. Harding's illness, it is not without a show at least of reason that the United States government claimed from Great Britain indemnification for the losses consequent upon her escape.

'No. 290' made for Terceira, one of the Western Islands, where she arrived Aug. 13—her speed and seagoing qualities being fully proved upon the voyage; and a few days afterwards she was joined by the *Agrippina*, of London, carrying her guns, stores, and supply of coal, and by the *Bahama*, with Capt. Semmes and his officers on board. By Aug. 24 she had shipped her armament and stores, and was ready for sea; and now Capt. Semmes produced his commission to the sailors, named the vessel the *Alabama*, and hoisted the Confederate flag. The sailors on board the *A.* and her consorts were Englishmen, all entered for a feigned voyage; but with few exceptions they enlisted under Capt. Semmes, though the terms upon which they insisted were exorbitant. The crew now consisted of 80 men all told; and the armament of eight 32 pounders. The *A.* made her first

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capture Sept. 5. Within eleven days of that date, she captured and burned property the value of which exceeded her own cost. The people of the United States were filled with indignation against Great Britain for permitting the escape of such a destroyer. Their indignation against 'the pirate Semmes' was only less than the alarm with which they regarded the depredations of the *A.* Several fast-sailing cruisers were sent in search of her.

Capt. Semmes made for the American coast, which he had determined to make his first cruising-ground. He was ambitious of making a few captures within sight of New York; but running short of coal, he was obliged to give up this somewhat daring scheme, and make for a coaling station. He afterwards lay on the track of the California mail-steamers running between Aspinwall and New York; and after waiting for some time, he captured the *Ariel* mail-steamer, with 140 marines, several U. S. officers, and 500 other passengers on board. A heavy gun and a quantity of specie were all that he took by this capture, but it greatly raised the prestige of the *A.*, and increased the alarm of the American shipowners. The passengers and crew of the *Ariel* were too numerous to be taken on board the *A.*; and as Capt. Semmes found yellow fever raging at Kingston in Jamaica, at which port he had intended to land them, he was unable to destroy the vessel, and had to set her free, after taking a bond for a large sum to be paid on the conclusion of the war. Shortly afterwards, 1863, Jan. 11, an encounter between the *A.* and a U. S. vessel augmented the reputation of the former. Cruising off Galveston, Texas, the *A.* gave battle to the U. S. gunboat *Hatteras*, an old vessel, somewhat her inferior in armament, and sunk her after a few broadsides. The destruction of the *Hatteras* and the capture of the *Ariel* were the most remarkable events in the career of the *A.* until her closing scene arrived. Her history consists of a monotonous succession of captures made in different seas, her prizes being merchant-vessels incapable of resistance, which were burned, or, when there was convincing evidence of the neutral ownership of the cargo, which did not often happen, liberated upon bond. She captured in all 65 vessels; and the value of the property she destroyed has been estimated at \$4,000,000. It was, however, by the heavy insurance for war-risks to which she subjected them, and still more by the difficulty she caused them in getting freights, that the *A.*'s career inflicted the greatest injury upon the shipowners of the United States. When the pursuit after her became too hot on the American coast, she sailed for the Cape of Good Hope, and cruised in the eastern seas. Returning to Europe, she arrived in the English Channel, 1864; and, June 11, entered the French port of Cherbourg to refit and supply herself with stores. She had been nearly two years at sea, and was in bad condition; her speed and sailing qualities were considerably impaired. Permission to make the necessary repairs was given by the authorities of the port of Cherbourg.

But within a few days, the U. S. steamer, *Kear-*

ALABANDINE.

sarge, commanded by Capt. Winslow, a former ship-mate of Capt. Semmes, arrived at Cherbourg; and she made a demonstration which the officers and crew of the *A.*—writhing under the abuse that had been heaped upon them, and aware that their career had been inglorious—regarded and resented as a challenge. Capt. Semmes knew, and probably shared, their feelings, and determined to gratify them; he sent notice to the United States consul that he would sail out and fight the *Kearsarge*. The two ships were, to appearance, not unequally matched; in reality the *Kearsarge* had considerably the advantage in number of crew, armament, speed, and general condition; besides that, she was protected amidships by armor. The fact of her being thus protected, and the extent of her superiority, seem to have been unknown to Capt. Semmes. The fight took place on Sunday, the 19th of June, outside the port of Cherbourg, all Cherbourg gazing at it from the neighboring heights. The *Kearsarge*, having the superiority in sailing, was able to keep at a distance of about 500 yards from her enemy; her armor in a great measure protected her from the enemy's shot; and, as might be expected, her guns were better served than those of the *A.* Before the fight had lasted an hour, Capt. Semmes found his ship was sinking, and gave orders to pull down his flag. The boats were got out, and the wounded placed in them; but before the *Kearsarge* could come to the rescue, the *A.* went to the bottom. The boats of the *Kearsarge* saved many of the crew. Others, including Capt. Semmes, were picked up by an English yacht, the *Deerhound*, which had been allowed by Capt. Winslow to help in rescuing the *A.*'s crew. These the *Deerhound* immediately carried within the neutral jurisdiction. Semmes and the others saved by this vessel were afterwards charged with having broken their faith as prisoners who had asked for quarter from the *Kearsarge*. As regards the *Deerhound*, the seamen of the *A.*, once upon its deck, were entitled to the protection of Great Britain, and no previous compact could have deprived them of it.—See *The Cruise of the Alabama and the Sumter*, compiled from the papers of Capt. Semmes.

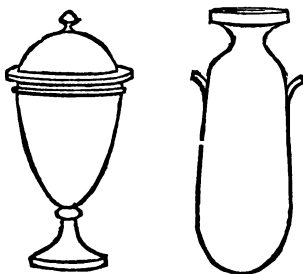
The 'Alabama Question' was fairly raised in the winter of 1862-63, when Mr. Seward, in his diplomatic correspondence, declared that the U. S. government held itself entitled at a suitable time to demand full compensation for the damages inflicted on American property by the Anglo-rebel vessels; and the question never ceased to be a source of irritation between the two peoples till its final settlement by special tribunal of arbitration. This court, consisting of the representatives of England and the United States, and of three other members appointed by the king of Italy, the president of the Swiss Confederation, and the emperor of Brazil, met at Geneva, 1871, Dec. 17, and the claim for indirect damages to American commerce having been allowed to drop gave its final award, 1872, Sept. 15. It was decreed, that Great Britain should pay the United States in compensation the sum of £3,229,166 13s. 4d.

ALABANDINE, n. *āl'ā-bān'dīn* [L. *ālābāndīcus*]: a

ALABASTER—ALAGOAS.

stone mentioned by Pliny, so called from Alabanda, where it was cut and polished; a sulphuret of manganese usually occurring in massive granular crystals of an iron-black color and semi-metallic lustre.

ALABASTER, n. *ăl'ă-băs'tér* [Gr. *alabás'trōn*]: ADJ. pertaining to; made of alabaster. The name A. is given to two kinds of white stone, chemically distinct, but resembling each other in appearance, and both used for ornamental purposes. A. proper is a white, granular, semi-transparent



Alabastra.

variety of gypsum (q.v.) or *sulphate* of lime. It occurs in various countries, the finest near Volterra, in Tuscany, where it is worked into a variety of the smaller objects of sculpture, vases, time-piece stands, etc. Gypseous A. of good quality is found also in Derbyshire, and many ornamental articles are made of it at Matlock and other places. Not being quite insoluble

in water, it does not bear exposure to the weather; and its softness makes the surface easily become rough and opaque. Nor is it generally found in sufficient masses for large works. The other stone is a compact, crystalline *carbonate* of lime deposited from water in the form of stalagmite, etc. It is distinguishable from the gypseous alabaster by its effervescing with an acid, and by its hardness; real alabaster may be scratched with the nail.—The name is derived from Alabastron, a town in Upper Egypt, where this kind of stone was abundant, and was manufactured into pots for perfumes. Such pots were called *alabastra*, even when made of other materials.

ALABASTRUS, n. *ăl'ă-băs'trūs* [L. *alabaster*, a rose-bud in its green state]: in *bot.*, the flower-bud while yet green and before it opens.

ALACK, int. *ă-lăk'* [corrupted from *alas*]: an exclamation expressive of sorrow. **ALACK-A-DAY**, an exclamation to express regret or sorrow. *Note.*—Because *alack* would be an unusual phonetic change of *alas*, it is suggested that *alack* is a vulgar corruption of *Ah! Lord!* or, *Ah! Lord Christ!* thus forming originally a prayer for aid or comfort. **ALACK-A-DAY**, give help or comfort this day.

ALACRITY, n. *ă-lăk'rĭ-tĭ* [L. *alacrĭtas*, liveliness, ardor—from *alacer*, brisk: F. *alacrité*—from OF. *alaigreté*]: cheerfulness; gayety; a smart willingness or readiness.

ALAGOAS, *ă-lă-gō'ās*: maritime province of Brazil, which formed at one time a dist. of the prov. of Pernambuco; is bounded on the n. and w. by Pernambuco, and on the s. is divided from the province of Sergipe by the navigable river San Francisco. The country is mountainous in the n.w., and low, marshy, and unhealthy on the coast.

ALAIS—ALAMOS.

The chief productions are the sugar-cane, cotton-plant, mandioc or cassava, maize, rice, etc., and also timber and dyewoods. The capital, A., is on the lake Manguaba. The name A. is derived from the lakes (*lagoas*) in which the province abounds. Pop. of prov. (1882) 397,379.

ALAIS, *á-lí'*: town of the dept. of Gard, France, in a fertile plain on the right bank of the Gardon, at the base of the Cevennes mountains, 23 m. n.w. from Nîmes, with which it is connected by railway. It embraced the Protestant cause in the religious wars of France; and Louis XIII., in person, accompanied by the Cardinal de Richelieu, besieged it, and having taken it, in 1629, demolished its walls. Three years later, the Baron of Alais having taken part in the rebellion of Montmorency, the castle was destroyed. Protestantism still prevails. 'A. is a very flourishing town, chiefly by reason of the mineral wealth of the surrounding district, which produces coal, iron, lead, zinc, and manganese. The coal and iron mines are of chief importance. There are large iron-foundries in the town and neighborhood. There are also manufactures of ribbons, stockings, gloves, vitriol, and earthenware. A. is an episcopal seat. Pop. (1881) 17,598.

ALAJUELA, *á-lá-hwá'lá'*: city of the state of Costa Rica, Central America, 23 m. w.n.w. from Cartago, and a little on the w. side of the water-shed between the Atlantic and the Pacific. It contains many good houses, and has extensive suburbs of detached houses, embowered among trees and flowering shrubs. The culture of the sugar-cane is the chief industry in this region. Pop., including suburbs, 12,575.

ALAMANNI, *á-lá-mán'ē*, LUGI: 1495-1556; b. Florence: distinguished Italian poet. His father, of noble birth, was a zealous partisan of the Medici, and Luigi stood high in their favor, till, in revenge for some real or fancied wrong, he conspired against the life of Cardinal Guiliiano, the representative of Leo X. When this became known, A. fled to Venice, and thence, on the accession of the cardinal to the papal chair, to France. In 1527, encouraged by the pope's reverses, he returned to Florence, and urged the republic to seek the protection of Charles V., by means of Andrea Doria's friendly mediation. The republic declared such a proposal treachery, and A. sailed with Doria for Spain. Finally, he settled in France, employed as a diplomatist by Francis I. and Henry II. He d. at Amboise. He wrote epics, dramas, and minor poems, much admired in their day, and the honor of introducing blank verse into Italian poetry belongs either to A. or to Trissino.

A-LA-MODE, ad. *á-lá-môd'* [F. after the fashion]: according to the fashion. **A-LA-MORT'**, ad. *-môrt'* [F. to the death]: half dead; desperately; in a depressed state.

ALAMOS, **LOS**, *lôs á-lá-môs* [i.e., *The Poplars*]: town of Mexico, state of Sonora, dept. of Sinaloa, 110 m. n.n.w. from Sinaloa. It is in a barren plain, but in a region famous for its silver mines. The houses are mostly of stone or brick, covered with stucco. Provisions are dear, being

ALAND ISLANDS—ALARCON Y MENDOZA.

brought from a distance, and the town is very insufficiently supplied with water. Pop. 10,000.

ALAND ISLANDS, *aw'länd*, or *ö'länd*: a numerous group of small islands and rocks at the entrance of the gulf of Bothnia, opposite Abo, about 25 m. from the Swedish coast, and 15 from that of Finland. They are called, by the Finns, *Ahvenanmaa*. About 80 of them are inhabited. Although these rocky isles are covered with but a thin stratum of soil, they bear Scotch fir, spruce, and birch trees, and, with proper cultivation, produce barley and oats, besides affording subsistence to a hardy breed of cattle. The inhabitants are of Swedish origin, skilful sailors, fishermen, and seal-hunters. Pop. about 16,000. The largest of the islands, which gives its name (signifying 'Land of Streams') to the whole group, is about 18 m. long by 14 broad. It is moderately wooded and fruitful; pop. nearly 11,000. These islands belonged formerly to Sweden, but were seized by Russia in 1809. Previous to this, they had several times changed hands between these two powers. In 1717, the Swedes were defeated by the Russians in a naval engagement near Aland, the first important exploit of the Muscovite navy. The importance of these islands as a military position led to the construction, in the reign of the emperor Nicholas, of those strong fortifications at Bomarsund which, in August, 1854, were destroyed by the Anglo-French force, commanded by Sir Charles Napier and Baraguay d'Hilliers. Two thousand prisoners were taken. This extensive fortress (supposed to have been but the first of an intended series in the Baltic) commanded the anchorage of Ytternæs, capable of containing a large fleet.

ALANGIACEÆ, *ä-län-jǎ-ä'cě-ě*: a natural order of dicotyledonous plants, allied to *Myrtaceæ* (q.v.), and containing only about eight known species, trees, and large shrubs, of which the greater number belong to the American genus *Nyssa* (see TUPELO), differing from the rest of the order in the absence of petals. The one-celled fruit, and pendulous albuminous seeds, constitute marks of distinction from *Myrtaceæ*. The fruit of *Alangium decapetalum* and *A. hexapetalum*, natives of the East Indies, are eatable, but mucilaginous and insipid. The timber is good; the roots are aromatic.

ALARCON Y MENDOZA, *ä-lar-kîn' ē men-dō'thā*, **JUAN RUIZ DE**: one of the most eminent of Spanish dramatists; b. Tasco, Mexico, about the end of the 16th c.; d. 1639. He belonged to the ancient family of the Ruizes of Alarcon, of which a branch had emigrated to America. Having studied at the college that had been instituted in Mexico, he removed to Spain, where he is mentioned as *Relator del real consejo de las Indias* (Reporter of the royal council of the Indies), 1622. His early success, and his haughtiness towards the public and his brother writers in his consciousness of superior powers, made him the object of venomous epigrams by the most famous poets of the time, in which the deformed upstart from New Spain, with his pride and contemptuousness, was held up to public ridicule. Even during his lifetime,

ALARIC I.

his best pieces were attributed to others, and were printed and represented under the names of more favored poets. This early withdrawal and oblivion of his name, together with the scarcity of his works, and the *éclat* of Lope de Vega's and Calderon's dramas, have been the cause that he has seldom been mentioned, and but little appreciated by historians of literature, even to the latest times. Yet some of the best critics rank him next to Calderon and Lope de Vega as a dramatic writer. Besides many single or detached pieces printed in collections, he published a number in his *Comedias* (vol. i., Madrid, 1628; vol. ii., Barcelona, 1634). Hartzenbusch began a collected edition at Madrid, 1848. A. attempted almost all the kinds of drama in vogue in his time; and was especially eminent in the heroic, as the best specimens of which may be mentioned *El Tejedor de Segovia* and *Ganar Amigos*, or *La que mucho vale mucho chesta*. A.'s mastery in delineating character is shown in the *Comedias de Costumbres*, or character comedies, of which he may be held as the creator. The best known are *La Verdad Sospechosa* (imitated by Corneille in his *Menteur*) and *Las Paredes Oyen* (Walls have Ears), which are yet represented on the Spanish stage. Of his comedies of intrigue, the best specimen is *Todo es ventura*. It does not appear that A. wrote any *Autos* or sacramental allegorical dramas, though his two pieces, *El Antichristo* and *Quien mal ande en mal acaba*, betray a tendency to ascetic mysticism. Lope and Calderon, the coryphæi of that age, are the only dramatists that excel A. Combining, in no mean degree, the characteristics of both, he excels them in purity of language and elevation of moral feeling.

ALARIC I., *al'ä-rik* [a form of *Athalaric*, 'noble ruler']: d. 410: belonged to one of the noblest families of the Visigoths. He makes his first appearance in history in 394, as leader of the Gothic auxiliaries of Theodosius in his war with Eugenius; but after the death of the former he took advantage of the dissensions and weakness that prevailed in the Roman empire to invade, 395, Thrace, Macedon, Thessaly, and Illyria, devastating the country, and threatening Constantinople itself. Rufinus, the minister of Arcadius, appears to have sacrificed Greece in order to rescue the capital, and Athens was obliged to secure its own safety by ransom. A. proceeded to plunder and devastate the Peloponnesus, but was interrupted by the landing of Stilicho in Elis with the troops of the west. Stilicho endeavored to hem in the Goths on the Peneius; but A. broke through his lines, and escaped with his prisoners and booty to Illyria, of which he was appointed governor, 396, by the emperor Arcadius, who was frightened by his successes, and hoped, by conferring this dignity on him, to make him a peaceful subject instead of a lawless enemy. In 402 he invaded upper Italy, and Honorius, the emperor of the west, fled from Rome to the more strongly fortified Ravenna. On the way to Gaul, A. was met and defeated by Stilicho at Pollentia on the Tanaro; but it was not till the following autumn that the result of the battle of Verona forced him to retire into Illyria. Through the mediation of Stilicho, A. concluded a treaty with Honorius, according to which he was to advance into Epirus,

ALARIC II.

and thence attack Arcadius in conjunction with the troops of Stilicho. The projected expedition did not take place, yet A. demanded indemnification for having undertaken it; and Honorius, by the advice of Stilicho, promised him 4,000 pounds of gold. When, after the death of Stilicho (q.v.), Honorius failed to fulfil his promise, A. advanced with an army, and invested Rome, which he refused to leave till he had obtained the promise of 5,000 pounds of gold, and 30,000 of silver. But neither did this negotiation produce any satisfactory result, and A. again besieged Rome, 409. Famine soon rendered some arrangement necessary; and in order to this, the senate proclaimed Attalus, the prefect of the city, emperor instead of Honorius. But A. soon forced him publicly to abdicate. The renewed negotiations with Honorius proved equally fruitless with the former, and A. was so irritated at a perfidious attempt to fall upon him by surprise at Ravenna, that he advanced on Rome for the third time. His victorious army entered the city 410, Aug. 24, and continued to pillage it for six days, though A. strictly forbade his soldiers to dishonor women or destroy religious buildings. When A. quitted Rome, it was only to prosecute the conquest of Sicily; the occurrence of a storm, however, which his ill-constructed vessels were not able to resist, forced him to abandon the project for the time; and his death soon afterwards at Cosenza, in Calabria, prevented his resuming it. In order that his remains might not be discovered by the Romans, they were deposited in the bed of the river Busento, and the captives who had been employed in the work were put to death. Rome and all Italy celebrated the death of A. with public festivities; and the world enjoyed a momentary repose. But A. himself was much less barbarous than his followers. He admired and sought to preserve those monuments of civilization with which the Eternal City abounded, and checked the excesses of his fierce soldiery. Yet through him the Goths learned the way to Rome. See Simonis, *Versuch einer Geschichte des A.* (Göttingen, 1858), and Eicken, *Der Kampf der Westgoten u. Römer unter A.* (Leipz. 1876).

ALARIC II., eighth king of the West Goths, or Visigoths: succeeded his father, 484. He was of a peaceful disposition, and wished to live on friendly terms with the Franks. His dominions were very extensive. Besides Hispania Tarraconensis and Bætica, he possessed numerous rich provinces in Gaul, and formed an alliance, which still further increased his power, with Gondeband and Theodoric, the latter of whom was his father-in-law and king of the East Goths. At length, however, he came into collision with the Frankish monarch, Clovis, whose cupidity had been excited by the extent and fertility of the territories over which A. ruled. An excuse was found for breaking the peace which existed between the two nations, in the fact that A. was a zealous Arian. This circumstance had given great offense to many of his subjects, who were orthodox Catholics; and ostensibly to vindicate the true doctrine, the newly converted barbarian, Clovis, declared war against him. The result was fatal to A. He was slain by the hand of Clovis himself at Vouillé, near Poitiers, and his forces completely routed.

ALARM—ALA-SHEHR.

A. is said to have been indolent and luxurious in his youth; but this may simply imply that he was not fond of those sanguinary pleasures which captivated his savage contemporaries. He was tolerant in his religious convictions. Though an Arian, he did not persecute the Catholics. He enacted several useful statutes, and kept a watchful eye on all parts of his kingdom. It was during his reign that the *Breviarium Alaricianum*, or code of A., was drawn up. It is a selection of imperial statutes and writings of the Roman juriconsults. A. sent copies of it to all his governors, ordering them to use it and no other. An edition of it was published by Sichard, at Basle, in 1528.

ALARM, v. *ä-lärm'* [F. *alarmer*, alarm, a call to arms; *alarmer*, to frighten—from It. *all'arme*, to arms—from mid. L. *ad illas armas*—from L. *ad*, *arma*, arms—*lit.*, to call to arms]; to give a sign to warn of approaching danger; to surprise; to arouse to danger: N. an outcry to announce danger; sudden surprise; terror. ALARM'ING, imp.: ADJ. terrifying; awakening. ALARMED, pp. *ä-lärmd'*. ALARM'INGLY, ad. *-lī*, in a manner to excite apprehension. ALARMIST, n. *ä-lärm'ist*, one prone to terrify with danger.—SYN. of 'alarm, n.': terror; fear; fright; consternation; trepidation; panic; apprehension; affright; dismay; agitation; disquiet; disturbance.

ALARUM, n. *ä-lär'üm* (see ALARM): in *OE.*, a call to arms; a piece of mechanism in a *clock* by which a loud noise is produced at any fixed time.

ALARY, a. *äl'är-ī* [L. *ālī*, a wing]: in *OE.*, wing-like. ALATE, a. *äl'āt*, winged; furnished with appendages like wings.

ALAS, int. *ä-läs'* [OF. *alas*—from *a!* *ah*, *las!* wretched—from L. *ah!* *lassus*, wearied: F. *he!* *las*, weary: Prov. *ai las!* *ah!* wretched me! *alas!*]: an exclamation of sorrow or pity.

ALA-SHEHR, *ä'lā-shēr'* [i.e., *The Exalted City*, ancient *Philadelphia*]: city of Asia Minor, pashalic of Anatolia, 75 m. e.-by-s. from Smyrna, at the n.e. base of Mount Tmolus. It was founded by Attalus Philadelphus, king of Pergamos, about B.C. 200, and is famous as the seat of one of the 'Seven Churches of Asia.' It is still a place of considerable importance, and carries on a thriving trade by caravans, chiefly with Smyrna. It is surrounded by a wall, and is of large extent; but the streets are narrow and dirty. There are many interesting remains of antiquity. Pop. about 8,000, including 250 Greek families.

ALASKA.

ALASKA: a territory of the United States, occupying a peninsula in the extreme n.w. of N. Amer., formerly in the possession of Russia, but purchased by the U. S. govt., 1867, for the sum of \$7,200,000, at the instance of William H. Seward, then Sec. of State. A. is comprised in six geographical divisions: 1. The Arctic division, 125,245 sq. m., comprising all that portion of the North American continent between the 141st meridian in the e., and Cape Prince of Wales in the w., the Arctic Ocean in the n., and the watershed n. of the Yukon river system in the s. 2. The Yukon division, 176,715 sq. m., comprising the valley of the Yukon river, and the island of St. Lawrence, in Behring Sea. 3. The Kuskokvim division, containing 114,975 sq. m., bounded on the n. by the Yukon division, and comprising the valleys of the Kuskokvim, the Togiak and the Nushegak rivers, and the intervening system of lakes. Behring Sea washes the whole w. and s. coasts of this division, which also includes Nunivak island. 4. The Aleutian division, 14,610 sq. m., comprising the Aliaska peninsula, and including the fur seal islands. 5. The Kadiak division, 70,884 sq. m., comprising the s. coast of the Aliaska peninsula, with the Kadiak group of islands, the islands and coasts of Cook's inlet, the Kenai peninsula, and Prince William sound. The main Alaskan range of mountains bounds this division on the n. and w. 6. The s.e. division, 28,980 sq. m., comprising the coast from Mount St. Elias in the n. to Portland canal in the s., together with the islands of the Alexander archipelago, between Cross sound and Cape Fox. The e. boundary of this division is the rather indefinite line established by the Anglo-Russian and Russian-American treaties of 1824 and 1825 respectively. Of the Arctic division, almost entirely within the Arctic Circle, only the seacoast has been explored. Coal abounds in this region, and is easy of access. The pop. consists of Eskimos, about 3,000. The Yukon division, the largest in A., is much better known, having been the seat of a large trade for centuries by way of the Yukon river. At present the pop. is about 7,000, scattered through about a hundred settlements, of from a dozen to three hundred persons, including some 40 or 50 whites and creoles, 2,500 Athabaskans, and nearly 5,000 Eskimos. The Yukon river is 2,044 m. long, drains an area of 260,000 sq. m., and is said to empty one-third more water at its deltoid mouth than the Mississippi, but its course extends for hundreds of miles over vast tracts of swamp which only small boats can navigate. The third Alaskan division has a pop. of about 9,000, nearly all Eskimos. The moose and black bear abound in this division, where there is also extensive salmon fishing, but existence here in summer is made intolerable by the swarms of mosquitoes, and of a small poisonous black fly whose bite produces a most depressing condition of low fever. The Aleutian division, including the island of Oonalashka, where there is an important village, the port of entry for all of western Alaska, has a pop. of 2,450, including 560 whites and creoles, and 1,900 Aleutians. In this division are the breeding-grounds of the fur-seal, on the islands of St. Paul and St.

ALASKA.

George, occupied by a rich trading firm under a lease from the U. S. govt. Here are also to be found plenty of otter and blue fox, which are carefully protected and preserved. The Kadiak division has a pop. of 4,400, of which one-half are Eskimos. Here are found the gigantic brown bear, blue fox, marten, land and sea otter, reindeer and mink, in large numbers. Whales are plentiful in these waters; there are cod-fishing banks, and the rivers are stocked with salmon. The south-eastern division has more of the character of British Columbia than of the rest of Alaska. It is densely wooded with heavy timber, and the coast-line is freely indented with bays and fiords, sheltered by the islands of the Alexander archipelago. Coal and copper are found on the islands, and have been worked to some extent. Gold-bearing quartz and surface gold have been found on Baranof island, and in other places, and have attracted large numbers of miners. In this division is Sitka, the most important point in A., and from the time of the American purchase until 1876, the post of a U. S. military force. The pop. of this division is nearly 8,000, of which about 500 are whites and creoles, the remainder being Thlinkets. The entire pop. of A. was estimated (1880) 83,426, of which number 430 are whites, and 1,756 creoles, 17,617 Eskimos, 2,145 Aleutians, 3,927 Athabaskans, 6,763 Thlinkets, and 788 Hyda.

The efforts towards the advancement of education in A. have not been either very extensive or very fruitful. Under the Russian govt. the Russian-American company established schools at the various stations, and at Sitka these schools were conducted with liberality and discretion. There was a Russian seminary at Sitka for several years, in which many of the creole and native priests now officiating in A. received their first instruction, but this establishment was subsequently removed to Kamtchatka. At present the only schools in western A. where English is taught are on the seal islands, and at Oonalashka, and these are sustained by a trading firm. In south-eastern A. the Presbyterian board of missions has done much better for the natives in the way of schooling, and a considerable school and home for girls exists at Wrangell, while there are two good schools at Sitka: the missionaries also have schools in some of the Indian and Eskimo villages. In religion, the natives and creoles all along the coast of A. belong to the Greek Orthodox Church. The tribes of south-eastern A. are mostly pagan. The Innuits, or Eskimos are generally brighter and more desirous of learning than the Aleutians.

The natives of A. are not, as a rule, long-lived. The entire want of sanitary precautions, combined with the rigor of the climate, produce a tendency to scrofulous or pulmonary disorders, rheumatism, and early decay. A man or woman past fifty years of age is a rarity. Snow-blindness and ophthalmia are very common among the Eskimos, the latter on account of the smoke-poison to which their eyes are subjected by their mode of living. The natives have no medicines whatever, nor any knowledge of medicinal herbs, a fact which is unusual even among the most

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savage races of other countries. Occasional epidemics of small-pox and the virulent 'black' measles occur, and destroy large numbers: the same occur at intervals with epidemics of typhoid pneumonia.

A. is, politically, a territory of the United States without its organization. It is a customs district, with a collector and three deputies. It has no laws except treasury regulations, no county or other political subdivisions, and no capital. A man-of-war with its commander at Sitka, represent its only police supervision. The vast distances between the principal settlements are a bar to any present political assimilation, since the inhabitants of Kadiak or Oonalashka can hear from those in Sitka by way only of San Francisco. The mail line established between Sitka, Wrangell, and Port Townsend, in Puget Sound, is the only branch of the postal-service extended over A.

The chief resources of A., besides its undeveloped mining possibilities, lie in its timber and its furs. Of these the furs, notably those of the fur seal, have far exceeded in value the anticipations even of those who advocated the purchase of the province from the Russians. During the ten years, 1870-80, the purchases of furs from the natives by American traders, aggregated in value the amount of \$3,033,764.20, divided as follows:

40,283	sea otter,	@	\$60 00	.....	\$2,416,980 00
18,964	land otter,	"	2 50	.....	47,410 00
41,217	beaver,	"	2 50	.....	103,042 50
6,992	black fox,	"	15 00	.....	104,880 00
19,410	cross fox,	"	2 50	.....	48,525 00
82,919	red fox,	"	1 00	.....	82,919 00
7,508	blue fox,	"	2 00	.....	15,016 00
11,492	white fox,	"	1 00	.....	11,492 00
819	black bear,	"	3 00	.....	2,457 00
5,207	brown bear,	"	1 50	.....	7,810 50
71,213	mink,	"	20	.....	14,242 60
81,609	marten,	"	2 00	.....	163,218 00
50,322	muskrat,	"	05	.....	2,516 10
6,312	lynx,	"	2 00	.....	12,624 00
421	wolf,	"	1 50	.....	631 50
Total					\$3,033,764 20

Including the fur-seal, the entire annual fur yield of A. is estimated to be worth \$2,181,832. The number of fur-seal killed in A., 1867-80, was 1,277,333, which, at \$15 a skin (the market value in London), amount to \$19,159,995. Nineteenths of all the skins taken are sent to London, where, and in Belgium, they are dressed and made up, America not being able to compete with their cheaper labor. The most careful estimate, based on the experience of the 13 years enumerated, shows that the loss of the 100,000 young male seals which it is permitted to kill annually, makes no perceptible impression on their numbers. So that, there being estimated to be from 2,500,000 to 3,000,000 fur-seals, male and female, at any one time, the govt. interest in these is represented by not less than \$10,000,000 or \$12,000,000 of permanently-invested capital. The whole business of taking the fur-seal was, in 1870, placed by the govt. in the

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hands of the Alaska Commercial company, for twenty years, by special act of congress. This company is an American corporation, with a charter, rules, and regulations. They employ a fleet of vessels, sail and steam: four steamers, a dozen or 15 ships, barks and sloops. Besides the seal islands, proper, they have stations scattered over the Aleutian Islands and that portion of A. w. and n. of Kadiak. Outside of the sea islands the trade of A. is entirely open to the public. The treasury officials on the seal islands are charged with the careful observance of every act of the company; a copy of the lease and its covenant is conspicuously posted in their office, translated into Russian, and perfectly familiar to the natives. The company employs the natives, under the immediate supervision of native foremen, paying forty cents for the labor of taking each skin. The seal islands, it will be understood, are the breeding-grounds, which are visited by the animals from May to July, the 'rookeries,' as they are called, being more full at the end of July than at any other time. It is estimated that, including the new-born young, there are as many as 6,000,000 seals on these islands each year. By Dec. 1. numbers of the seals have left the island, and by Dec. 10, they are all gone for the year. From the A. Commercial company, the U. S. govt. receives for the seal-killing franchise \$55,000 per annum, and also \$2 internal revenue tax for each seal-skin taken and shipped, besides an additional sum of 60½ cents for each seal-skin, and 55 cents for each gallon of oil obtained from said seals; besides which the company furnish fuel and food for the inhabitants of the islands; and no distilled, or spirituous liquors are allowed to be sold to the natives on the seal islands.

The fisheries of A. are among the valuable resources of the country, there being represented in those waters seventy-five species of food fishes. The cod-fishery is still in its infancy, but the shipments from the N. Pacific during the past ten years have averaged about 1,000,000 fish per annum, not far from half being from Alaskan waters. Salmon shipments in 16 years aggregated 3,000 barrels salted, and 8,000 cases canned. In the whaling industry, 36 sailing vessels and four steamers, in 1880. took a total valuation, including walrus, in bone, oil, and ivory, of \$1,189,000.

The timber of A. is mostly evergreen, the spruce family predominating, in trees frequently from three to four ft. in diameter. There are only one or two sawmills, and building lumber is largely imported; yet the native timber is plentiful and valuable.

With regard to minerals, while there is plenty of coal in Cook's inlet and at other points near the coast, it is generally of a low grade. As for gold mines, the Rocky Mountain gold-bearing quartz undoubtedly penetrates A. and extends to the Arctic Ocean, but the shortness of the time when the labor of mining is practicable renders it unlikely that this will soon become a productive industry. The entire output of the A. mines in 1880 was \$6,000, while the cost of mining was nearly four times as much. Silver ore and graphite have been discovered in Norton sound, and Cinna-

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bar on the Kuskokvim river; there are also said to be copper mines.

Agriculture in A. has very narrow limitations. The cereals cannot grow there at all; potatoes are fairly successful in the Alexander archipelago, at Cook's inlet, and, with periodical failures, at Kadiak. Shrub fruits of hardy varieties do very well. Meanwhile certain flowering plants grow in profusion, as roses, the pea, and about 200 annuals and perennials are found everywhere on prairie and forest-land, on the bare hills of the Aleutian Islands (q.v.), and on the great moors. Efforts were made by the Russians to raise stock in A., and these were successful on Kadiak island, though the long winter, from Oct. to May, tries the cattle severely. Small flocks of sheep have done very well at Oonalashka, and Alaskan mutton has a good name. With regard to the business advantages of A., it is officially stated that its savage population of 30,000 represents a larger volume of trade than any other portion of the United States, inhabited by uncivilized tribes, without reference to its mineral wealth, or the government revenue from the fur seal industry.

The Aleutian Islands, the Aliaskan peninsula, and the w. coast of Cook's inlet, present the appearance of a degree of volcanic activity unexampled elsewhere. Here, says a distinguished Russian authority, 'we have confined within the limits of a single century all the known phenomena of this kind; the elevation of mountain chains and islands, the sinking of extensive tracts of the earth's surface, earthquakes, eruptions of lava, ashes, and mud; the hot springs, and exhalations of steam and sulphuric gases.' Forty-eight craters on the Aleutian Islands alone have been enumerated, and, in addition to these we have on the Aliaskan peninsula four volcanoes—two on Cook's inlet, one on Prince William sound, one on Copper river, and one in the vicinity of Sitka (Mount Edgecombe); the most of these, however, have not been active since the middle of the last century, though some have been in active operation as recently as 1844.

The first knowledge of A. brought to the Russians was gained through the second expedition of Behring, who had discovered the straits which bear his name in 1728. The second expedition, fitted out in 1733, which proved fatal to Behring, its commander, resulted in the discovery that there were islands on the e. coast of the straits, and by 1743 an expedition for furs had been fitted out, and the Aleutian Islands to some extent explored. In 1760 certain of these islands were subjected to the Russian crown, and from this time forward, trading expeditions were frequent. One result of this was the awakening of a spirit of jealousy, which occasioned sanguinary conflicts between the different traders, besides frequent battles with the natives. In 1794 the first mission of the Greek Church was sent into Alaskan waters, under a special ukase of the empress Catherine II. At this time, also, by request of the head of one of the great trading companies, two hundred Siberian convicts were sent to Kadiak. The missionaries were very successful in their ministrations, and in a few years nearly the whole of

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the Aleutian tribes were converted and baptized. In the course of the present century seven organized parishes and three mission stations were established, the latter being on the main land. In 1799 a new company, the Russian-American, obtained a charter from the Russian government, granting to it the exclusive right to all the territory and the resources of water and land in the new Russian possessions, including Kamtchatka, the district of Okhotsk, and the Kurile islands. From this time until the purchase by the United States, the history of A. was identical with that of the Russian-American company. This company, however, was burdened with heavy obligations, being compelled to maintain at its own expense the government of the country, a church establishment, a military force, and, at various points in the territory, magazines of provisions and stores to be used by the government for its naval vessels or troops whenever it was necessary. The company paid no royalty or rent to the government, but the duties it paid on teas carried over the Chinese border amounted in some years to as much as two million roubles. This charter was granted for 20 years, and it was dreamed by the supporters of the company that it would have as magnificent a history as the British East India company. But disasters overtook it, chiefly from the loss of vessels through the inefficiency of captains and sailors, which were only restored by commerce being opened up with the Spaniards in California, and with the Americans. In 1820, the emperor Alexander I. renewed the charter, but soon after extravagance in the management of the company began to run it into debt, and after various mutations, the propositions of the U. S. govt. were accepted, and, 1867, Oct. 18, at Sitka, the formal transfer of A. was made by Prince Maksutof, acting for the Russian govt., Gen. Rousseau receiving the transfer as the commissioner on the part of the United States, Gen. Jefferson C. Davis being appointed commander of the new dept., with a force of 250 men and headquarters at Sitka. Total pop. of A., estimated (1880) 33,426; see in detail above.

ALATERNUS. *äl-ä-ter'nūs*: according to some writers, a genus of plants of the natural order *Rhamnaceæ* (q.v.), akin to *Rhamnus* (see BUCKTHORN); but regarded by most as a sub-genus of *Rhamnus*, consisting of evergreen shrubs, of which the best known is *Rhamnus A.*, or *A. phillyrea*, a large shrub, densely branched, with shining alternate leaves, which are more or less ovate. The flowers are dioecious, racemed, numerous, and small, much sought after by bees. This shrub is abundant in the s. of Europe, and is often planted in town-gardens in England to conceal walls and other objects, being of rapid growth, and not easily injured by smoke. The bark and wood have been used in dyeing.

ALATYAN, *a. ä-lä'ti-än* [from *Alatys*, which the Tartars of Siberia call themselves]: a name used to designate all those languages not connected with the two great families of speech, Aryan and Semitic.

ALAUSSI, *ä-low-së'*: town of the republic of Ecuador, South America, prov. of Chimborazo, 70 m. e. from Guaya-

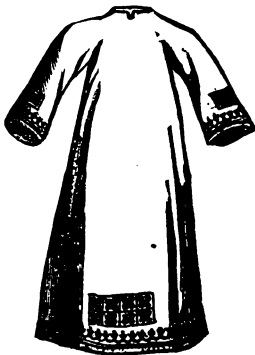
ALAVA—ALB.

quill, 7,980 ft. above the sea, in a valley of the Andes, on the river A., which flows into the Gulf of Guayaquil. The valley of the Alausi is extremely fertile, producing sugar, grain, and fruits. There are manufactures of woollen and cotton cloth in the town. Pop. 6,000.

ALAVA, *d'la-vá*, DON MIGUEL RICARDO DE: 1771–1843; b. Vittoria, Spain, of a noble family in the province of Alava: a Spanish general. He entered the navy in early life; but changed to the land-service. After the abdication of Ferdinand VII., he was for a time a zealous partisan of France; however, in 1811, when he saw the fortunes of Joseph beginning to wane, he abandoned that cause, allied himself with the national party, and accepted the office of Spanish commissary on the staff of Wellington. He gained the confidence of this general, and from this time manifested the strongest predilection for England and English institutions. The war of independence gave him numerous occasions of distinguishing himself. After the restoration of the king, however, he was arrested, on the suspicion of entertaining liberal opinions; but on the application of his uncle, Ethenard, the inquisitor, seconded by the influence of Wellington, he was not only liberated, but appointed ambassador to the Hague. He returned to Spain in 1820, after the revolution; became captain-general of Aragon, made himself conspicuous among the Exaltados, and figured in the ranks of the militia on occasion of the revolt of the royal guard at Madrid, 1822, July 7. In the Cortes assembled at Seville in 1823 he voted for the suspension of the royal authority, and took part in the negotiations carried on with the Duke of Angoulême at Cadiz. The re-establishment of absolute monarchy in the Peninsula drove him, as a political refugee, to Brussels and England, till, at the death of Ferdinand, he was recalled by the regent, Maria Christina. In 1834 he was appointed Spanish ambassador to London; and towards the end of 1835 he undertook a mission to Paris. Under the administration of Isturiz, A. showed himself as zealous for the moderate system as he had been for the preceding one, and advocated the French intervention, which he had opposed during his embassy to London. After the insurrection of La Granja, he refused to swear to the constitution of 1812, declaring that he was tired of constantly taking new oaths; he gave in his resignation accordingly, and retired to France, where he died.

ALB, or **ALBE**, n. *alb* [OF. *albe*—from mid. L. *alba*, an alb— from L. *albus*, white]: a long vestment of white linen extending to the feet, worn in early times

by all ecclesiastics at divine service, and now worn by the



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Rom. Cath. clergy. It differed from the more modern surplice (q.v.), which is a modification of it, in having narrower and shorter sleeves. At the foot and wrists were embroidered ornaments called *apparels*. In the ancient church newly-baptized persons were obliged to wear a similar garment for eight days; and hence catechumens were called *albat*; and the Sunday after Easter, on which they usually received baptism, came to be called Dominica in Albis. See WHITSUNDAY.

ALBA, ál'bá (ancient *Alba Pompeia*): a very ancient city of n. Italy, in the province of Cuneo, on the right bank of the Tanaro, 31 m. s.e. from Turin, in a plain surrounded by hills. The neighborhood produces much wine and silk, besides corn, oil, and fruits. The town has an extensive trade in cattle. It is an episcopal seat. The cathedral was founded in 1486. Pop. 6,900.

ALBA, ál'bá, or ALVA, ál'vá, FERDINAND ALVAREZ von TOLEDO, Duke of, prime-minister, and general of the Spanish armies under Charles V. and Philip II.: 1508-82; descendant of one of the most illustrious families of Spain. He was educated under the eye of his grandfather, who instructed him in the arts of war and of government. He fought, while yet a youth, at the battle of Pavia, and had the custody of Francis I. while a prisoner. He commanded under Charles V. in Hungary, was present at the siege of Tunis, and accompanied the expedition against Algiers. He defended Perpignan against the dauphin, distinguished himself in Navarre and Catalonia, and was in consequence created Duke of A. His cautiousness and his taste for political intrigue afforded as yet no very high evidence of his military talents; and even Charles V., whom he counselled, when in Hungary, to build a bridge of gold for the Turks rather than hazard a decisive battle, seems to have intrusted him with the command rather as matter of personal favor than recognition of his abilities. His pride was hurt at the low estimation in which he was held; and his real genius began to show itself. The victory which Charles V. gained at Mühlberg over John Frederic, Elector of Saxony, 1547, was due to the able generalship of the Duke of A. Under his influence, as president of the council of war, the captive elector was condemned to death; and it was entirely against his wish that the emperor commuted the sentence. He took part under the emperor in the expedition against Henry II., king of France, who had taken possession of Metz; but here his exertions, as well as those of the emperor, proved unavailing. He was more fortunate in Italy against the combined armies of the pope and the French king, which he repeatedly defeated during the campaign of 1555. After the abdication of the emperor Charles V. in 1556, he continued to hold the command of the army, and overran the states of the church, which, after the retreat of the French army, 1557, lay entirely at his mercy. He was obliged, however, by the command of Philip II., to conclude a peace with Pope Paul IV., and restore all his conquests. Being recalled from Italy, he ap-

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peared in 1559 at the court of France, with which Spain had become reconciled by the peace of Château-Cambresis, 1559, April 3; and as proxy for his sovereign, espoused Elizabeth, Henry II.'s daughter.

When the inhabitants of the Netherlands, who had been accustomed to freedom, revolted against the tyranny of Spain, and especially against the hated inquisition, the Duke of A.'s counsel was to suppress the insurrection forcibly and with rigor. The king accordingly committed the matter to his hands, and sent him to the Netherlands, 1567, with unlimited power and a large military force. His first step on arriving was to establish what was called the 'Bloody Council,' in which he himself at first presided, and over which he afterwards appointed the sanguinary Don Juan de Vargas. This tribunal condemned all without distinction whose opinions appeared dubious, or whose wealth excited jealousy. The present and the absent, the living and the dead, were subjected alike to trial, and their property confiscated by the council. A number of the merchants and mechanics emigrated to England; above 100,000 abandoned their native country, and many others enlisted under the banners of the proscribed princes, Louis and William of Orange. A., rendered still more savage by a defeat which befell his lieutenant, the Duke of Aremberg, put to death the counts Egmont and Horn on the scaffold. He afterwards defeated Prince Louis, and compelled William of Orange to retire to Germany; upon which he entered Brussels in the greatest triumph, 1568, Dec. 22. The pope presented him with a consecrated hat and sword, as Defender of the Catholic faith, an honor which, having been hitherto conferred only on crowned-heads, increased his insolence to the highest degree. He caused a statue to be cast, in which he was represented as trampling under foot two human figures, representing the nobles and people of the Netherlands, and this he set up in Antwerp. His executioners shed more blood than his soldiers; and none now withstood his arms except Holland and Zealand. But these provinces continually renewed their efforts against him, and succeeded in destroying the fleet equipped by his orders. This disaster, and perhaps still more the apprehension that he might lose the king's favor, induced him to request that he might be recalled. Philip gladly acceded, as he perceived that the obstinacy of the rebels was only increased by these cruelties, and he was desirous of trying the effect of milder measures. A. accordingly resigned the command of the troops to Don Louis de Requesens, and (1573, Dec. 18) left the country, in which, as he himself boasted, he had executed 18,000 men. The war which he had kindled burned for sixty-eight years, and cost Spain \$800,000,000, her finest troops, and the loss of seven of the richest provinces of the Netherlands.

A. was received at Madrid with the highest distinction, but did not long enjoy his former consideration. Don Frederic, one of his sons, having seduced one of the queen's ladies of honor under promise of marriage, and being arrested on this account, the father assisted him to escape,

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and, in opposition to the desire of the king, united him in marriage to one of his relatives. He was in consequence banished from the court to his castle of Uzeda, where he lived two years. But now the troubles in Portugal, the crown of which Philip claimed as his hereditary right, induced the king to draw A. anew from his retreat. The duke accordingly led an army into Portugal, and drove out Don Antonio, who, as grandson of John III., had taken possession of the throne. The whole country was speedily conquered (1581), and A., with his accustomed cruelty and rapacity, seized the treasures of the capital himself, while he allowed the soldiers to plunder without mercy the suburbs and the surrounding country. Philip, dissatisfied with these proceedings, desired to have an investigation of the conduct of the duke; but the haughty bearing of the latter, and the fear of a revolt, induced him to abandon it. A. died at Lisbon, at the age of 74. He had a fine countenance, with a haughty air, and a robust frame; he slept little, while he both labored and wrote much. It has been said of him, that during sixty years of military service he never lost a battle, and never allowed himself to be surprised.

ALBACETÉ, *ál-bá-thā'tū*: town of Spain, cap. of the province of the same name, in Murcia, 188 m. s.e. from Madrid, and a station on the railway from Madrid to Alicante. It stands in a fertile, but treeless plain; is built with some regularity, and contains a number of squares and many good houses. It is a place of considerable trade, and has great cattle-fairs in Sept. It is noted in Spain for the manufacture of knives and other steel goods, not, however, of superior quality. Pop. 18,976.

ALBACETÉ, the province, is formed partly from the former kingdom of Murcia, partly from New Castile; 5,966 sq. miles. It is generally hilly, and in some parts mountainous, some of its mountains attaining a height of 5,000 ft.; but it contains also rich plains and fertile valleys. Agriculture is more advanced than in most parts of Spain; corn and wine are largely produced, as also oil, hemp, tobacco, saffron, fruits of various kinds, and honey. Great numbers of sheep, goats, oxen, horses, mules, and asses are reared. The mineral wealth of the province appears to be considerable, but is not turned to much account. Pop. (1877) 219,122.

ALBAINS, n. plu. *ál-bānz'*, or **AUBAINS**, n. plu. *aw-bānz'* [mid. L. *albānus*, a foreigner or alien—from L. *alibinātī*, elsewhere born]: persons not born in a country; not natives; the right which a French king formerly possessed of seizing upon the property of foreigners on their death.

ALBA LONGA, *ál-bā lon'ga*: one of the most ancient cities of Italy, on the rocky ridge that runs along the e. shore of the Alban lake, between the lake and the Alban mount. See **ALBANO**. According to legendary history, it was built by Ascanius, the son of Æneas, about 300 years before the foundation of Rome, which is represented as a colony of A. Notwithstanding this, the Romans, under

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Tullus Hostilius, destroyed the city, and removed the inhabitants to Rome. It seems certain that A. was an important city long before the existence of Rome, and the head of a confederation of Latin towns, and that when it was destroyed, many of its inhabitants settled at Rome. Some traces of its walls are yet to be seen.

ALBAN, *awl-bân*, SAINT: the first martyr of Britain: b. Verulam, 3d c. After having long lived a heathen, was converted to Christianity, but put to death at the commencement of Diocletian's persecution of the Christians. His anniversary is June 22. The town of St. Albans (q.v.), which bears his name, is believed to stand on the site of his birthplace, or the scene of his martyrdom.

ALBANI, *âl-bâ'nê*: a rich and celebrated family of Rome, who came originally from Albania in the 16th c., and settled first at Urbino. The great influence of the family dates from the accession (1700) of Giovanni Francesco A. to the papal throne as Clement XI. It has since furnished a succession of cardinals. It was Cardinal Alessandro A. (1692-1779) who formed the famous collection of objects of art in the Villa A., outside the Porta Salaria at Rome. It is still a rich collection, although part of it was carried off by the French. The pieces taken away were restored in 1815; but the then possessor, being unable to pay for their removal to Rome, sold them to the king of Bavaria.

ALBANI, FRANCESCO: 1578-1660; b. and d. Bologna: painter of the Bolognese school, of the time of the Caracci. He with Guido Reni, studied first under Calvert, afterwards under the Caracci. He painted above fifty altar-pieces, worthy of the Caracci school; but his inclination and work were more to the representation of scenes of a playful and pastoral, or of a mythical kind. He had by his second wife a family of twelve children of extraordinary beauty, in whom he found exquisite models for his Venuses, Galateas, and angels' heads; with the disadvantage, however, of imparting a certain uniformity to the countenances of his figures. His representation of the Four Seasons, so often imitated, gained him great renown. A.'s chief defect is in the expression of life and feeling.

ALBANIA, *âl-bâ'nê-â*: the s.w. dist. of European Turkey, occupies the w. of the Balkan peninsula, from Bosnia and Montenegro to the Greek frontiers, which the Berlin congress of 1878 recommended should be advanced to the Kalamas river. Upper or Northern A. corresponds to the Illyria of the Romans, and Lower or Southern A., to the ancient Epirus. On the e. boundary forming the water-shed of the peninsula, rises the range of the Bora-dagh (*dagh*, in Turkish, means *mountain*), and the Pindus. The first detaches itself from the wild masses of the Tshar-dagh and Argentaro mountains; and w. of it lie parallel chains, inclosing on the one side, long elevated valleys, and sinking on the other in terraces down to level strips along the coast, consisting mostly of unhealthy swamps and lagoons. Pindus, to the s., is also flanked by isolated basins or hollows, whose western edges

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pass into the jagged and thick-wooded Epirotic highlands. These highlands advance to the sea, forming steep rocky coasts; one promontory, the Acroceraunian, projecting in Cape Linguetta far into the sea, reaches a height of 4,000-5,000 ft.

The chief rivers are the Bojana, the Drin, the Skombi, Ergent, Vojussa, Glykys or Acheron (which follows for some distance a subterranean channel, and, reappearing, is called Mauropotamos), the Arta, and the upper course of the Aspropotamos. Among the lakes, Bojana, Ochri, and Janina, are most important.

A fine climate, the heat of which is tempered by high mountains and the proximity of the sea, and a favorable soil, seem to invite the inhabitants to agriculture; but for the most part in vain. In the n., little or nothing is cultivated but maize; in the moist valleys, a little rice and barley are produced; but the mountain terraces are used as pastures for numerous herds of cattle and sheep. In Epirus there is more variety. Here the slopes of the lower valleys are covered with olives, fruit and mulberry trees, intermixed with patches of vines and maize, while the densely-wooded mountain-ridges furnish valuable timber. The plateau of Janina yields abundance of grain; and in the valleys opening to the s., the finer fruits are produced, with maize, rice, and wheat. Even cotton and indigo might be profitably cultivated in the moist valleys; but in its present wretched condition, the country barely supports its scanty population.

The inhabitants, estimated about 1,000,000, are a peculiar people, the Albanians or Arnauts; they call themselves Skipetars. They are descendants of the ancient Illyrians, mixed with Greeks and Slaves, and not to be confounded with the Albani that live on the Caspian Sea. The Albanians are half-civilized mountaineers, frank to a friend, vindictive to an enemy. They are constantly under arms, and are more devoted to robbery and piracy than to cattle-feeding and agriculture. They live in perpetual anarchy, every village at war with its neighbor, and even the several quarters of the same town carrying on mutual hostilities. Many of them serve as mercenaries in other countries, and they form the best soldiers of the Turkish army. At one time, the Albanians were all called Christians; after the death of their last chief, the hero Scanderbeg, and their subjugation by the Turks, a large part became Mohammedans, who distinguished themselves by cruelty and treachery towards the tribes that remained true to their old faith. There are three main divisions of the Albanians—the *Gheg* (*Ghegides*), in Upper A., the purest representatives of the ancient Illyrian stock; the *Toshk* (*Toskides*), in Central and Lower A.; and the *Epirots*, largely mixed with Greeks in the s. To the latter section belong the Suliots (q.v.). The Mirdites, who are Roman Catholics, are the noblest of the northern tribes. The Albanian or Skipetar language, a distinct and peculiar tongue, belongs to the Indo-European group, and is derived from the ancient Illyrian, mixed with Greek, Turkish, and other intrusive elements. There are

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two main dialects, northern and southern. A. was officially divided by the Turks into the vilayets of Scutari and Janina. The Berlin congress of 1878 granted a considerable addition of territory to Montenegro, including Podgoritzza and Antivari. This cession, as also that of Dulcigno, demanded from the porte by the western powers in 1880, was opposed by the Albanians, who formed a national league to prevent it. A conference of plenipotentiaries, Berlin, 1880, insisted that the porte should carry out the recommendation of the Berlin congress, and cede to Greece the portion of A. s. of the Kalamas river. Turkey, however, agreed in 1881 to cede only the portion e. of the river Arta, with the town of Arta.

ALBANO, *ál-bá'nō*: town of Italy, about 18 m. from Rome, on the declivity of the lava-walls which encompass the lake Albano, and opposite the site of Alba Longa. It is the seat of a bishop, and is surrounded by the mansions of wealthy Romans. A valuable wine is made here. Pop. 6,200.

THE ALBAN LAKE, or Lago di Castello, is in the basin of an extinct volcano, and has a circumference of 6 m., with the enormous depth of more than 1,000 ft. Its elevation is nearly 1,000 ft. above the sea. While the Romans were at war with the Veientes (390 B.C.), this lake rose to an extraordinary height in the heat of summer, and without any apparent cause. Etruscan diviners declared that the conquest of Veii depended upon letting off the waters of the lake. Stimulated by this, the Romans, under the direction of the Etruscans, opened an emissary or tunnel through the lava-wall which bounds it. In the execution of this work they acquired the art of mining, which they now applied to undermine the walls of Veii. The tunnel, which still remains, and still fulfils its ancient office, is $1\frac{1}{2}$ m. in length, with a height of 7 ft., and a width of 4 ft. On the e. bank of the lake rises Monte Cavo, the ancient Mount Albanus, 3,000 ft. high, affording an extensive and magnificent view from its summit. Upon it once stood the splendid temple of Jupiter Latialis, approached by a paved way, for the ascent of the solemn processions of the Latin confederation (*Feris Latinæ*), and for the ovations of Roman generals. The road remains, in great part, perfect to this day.

The Albano stone, called Peperino, was much used in Roman buildings. It is a kind of volcanic tufa, of an ash-color, and is still quarried extensively at A.

ALBANS, ST., *-awl'bānz*: ancient borough in Hertfordshire, situated on the top and northern side of a picturesque hill, 21 m. n.w. from London. The Ver, a small tributary of the Colne, separates it from the site of the ancient Verulamium (Verulam), an important station in the time of the Romans, and the scene of a terrible slaughter in the insurrection under Boadicea. In honor of St. Alban, said to have suffered martyrdom here in 297, a Benedictine monastery was founded by Offa, king of Mercia, 796. The foundation of the town is supposed to be due to Ulsig (or Ulsin), abbot about 150 years later. Two battles were fought near St. A. during the Wars of the Roses, 1455 and 1461. In the first,

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Henry VI. became a captive; in the other he was set at liberty by his brave queen, Margaret of Anjou. The old abbey church, restored in 1875 by Sir Gilbert Scott, is a cruciform building of irregular architecture, 547 ft. in length, 206 in breadth, with an embattled tower 146 ft. high. The abbot of St. A. had a seat in the house of peers, and had precedence of all other English abbots. In St. Michael's church is a monument to the memory of the great Bacon, who bore the titles of Baron Verulam and Viscount St. A. More recently, the Beauclerk family have taken from this place the title of duke, and the Grimston family that of earl. The borough was disfranchised in 1852 for bribery. Pop. (1881) 10,930, many of whom are employed in straw-plaiting. St. A. has recently been made the centre of a new diocese of the Church of England; its first bishop having been enthroned 1877, June.

ALBANY, *āl'bā-nī*, or ALBAINN: an ancient name for the Highlands of Scotland, retained in some degree of use to our own day. Connected with it is the term *Albiones*, applied to the inhabitants of the entire British island in Festus Avienus's account of the voyage of Hamilcar, the Carthaginian, B.C. 5th c.; also the term *Albion*, which appears as the name of the island in Aristotle's *Treatise of the World*. It may, indeed, be safely assumed that Albion or Albany was the original name of Britain among its Celtic population; and that it only became restricted to the n.w. provinces of Scotland, when the Celts had for the most part become confined to the same region. Albainn means a country of heights (the root being *alb* or *alp*, a height); and it is remarkable to find Albania also a mountainous country. The modern use of the name A. may be said to have taken its rise in an act of a Scottish council at Scone, 1398, June, when the title of Duke of A. was conferred on the brother of King Robert III., then regent of the kingdom. The title, being forfeited in the son of the first holder, was afterwards conferred on Alexander, second son of King James II., in the person of whose son, John, it became extinct, 1536. Subsequently it was conferred in succession on Henry Lord Darnley, on Charles I. in infancy, on James II. in infancy, and (as a British title) on Frederick, second son of George III. Prince Charles Stuart assumed the appellation of Count A. as an incognito title, and gave the title of Duchess of A. to his legitimated daughter. The title Duke of A. was restored in 1881, when the queen conferred it on Prince Leopold.

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ALBANY, *awl'bă-nĭ*: a city, cap. of Albany co. and of the state of New York; on the w. bank of the Hudson river. 145 m. n. of New York, and near the head of tide-water. Its site at a short distance from the river rises to a height of more than 200 ft., and affords an extensive view. Next to Jamestown, Va., A. is the oldest settlement of the original thirteen colonies. It was established by the Dutch, 1614, as a trading-post, and in 1623 was the site of Fort Orange. It was afterwards named Beverwyck and Willemstadt, and in 1664 was called Albany, in honor of the Duke of York and Albany, afterwards James II. The transfer from the Dutch to the English government was made, 1664, Sept. 24. But few changes were made in the conduct of the government, or of affairs, the most important being the enforcement of an order that the Dutch inhabitants should be taught the English language. But this peaceful change and orderly situation was only temporary. In 1672, Charles II. declared war against the Dutch provinces, and in July of the following year a Dutch fleet anchored off Sandy Hook in the lower bay, and Fort James having capitulated, the province returned to its former name of New Netherland, and Albany surrendered a few days later and again became Willemstadt. Yet in less than a year the process was once more reversed; the treaty of Westminster restored the province to the British and to the Duke of York and Albany, and 1674, Nov. 10, Edmund Andros took possession of New York, and an English ensign, a sergeant, and eighteen men received the surrender of Fort Nassau. In 1683, under a charter from the Duke of York and Albany, the province began to be governed by the votes of the freeholders, instead of simply by the will of the lord proprietor, and the first general assembly met in the city of New York. In 1685 a treaty of peace with the Indians was signed at Albany. The village at this time numbered about one hundred log houses, with a few buildings of brick, and was surrounded by a high fence, or stockade, as a protection from the depredations of the Indians. The date 1686, July 22, became important in its history as the time when, under the charter of Gov. Dongan, it became an incorporated city, with a mayor, a recorder, a chamberlain or treasurer, six aldermen, six assistant aldermen, a town clerk, a sheriff, a coroner, a clerk of the market, a high constable, three sub-constables, and a marshal, or 'sergeant at mace.' The French war and the constant danger of attack by the Indian allies of the Canadian French kept A. in a state of alarm during several years, or until the treaty of peace signed at Ryswick, Holland, 1697, Sept. 21. From this period, however, the city prospered, and it was the chief centre of the Indian trade. Covering a great part of the country from the St. Lawrence to the Gulf of Mexico, it was the policy of the province to aid it in all ways which would foster this lucrative trade, and establish the city on a firm foundation. Public buildings were constructed, a fire department organized, and there was every prospect of steady progress, when the war between the French and English broke out afresh, in 1744, and A., with the other frontier

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towns, suffered both from the active operations of the enemy and from a general stagnation of business. This war lasted four years, or until the treaty of Aix-la-Chapelle, 1748, after which affairs improved; and the renewal of hostilities in 1755, which led up to the capture by the British of Quebec and Montreal, and the surrender of Canada, concluded the long series of struggles from which A. in particular had suffered so much, from its situation in the direct way of each invading army. The action of the colonies in 1774-76 was readily acceded to by New York, and the citizens of A. were very spirited and determined in their resistance to British tyranny. The convention elected for the purpose adopted the constitution of the state, 1777, April 20, and Brig. Gen. George Clinton was elected first governor. The legislature first assembled at Kingston, then at Poughkeepsie, where it perfected the state government, and then again at Kingston. It was not until 1780, Jan. 4, that it held its first session in A., afterwards removing to New York. In 1797 the public offices of the state government were placed in A., and it became the state capital. For a number of years after the Revolution, the entire trade of the western part of the state centred in A. But it was the introduction of steam-navigation, by the successful venture of the *Clermont* on the Hudson river in 1807, that gave it its great impetus towards high prosperity. The establishment of lines of railway centring in or passing through A., and the construction of the Erie canal, were also important factors in the growth and progress of the city. The city is handsomely built, and contains a number of fine streets, Broadway and Pearl st., parallel with the river, being important thoroughfares; and State st., a splendid avenue, 100 ft. wide, leading from the river up to and past the fine structure of the new capitol. This building, which contains the halls of legislature and the state offices, is built of New England granite, in the style of the Renaissance, and is a magnificent and imposing pile, costing considerably over \$10,000,000. Of other public buildings of importance, there are the Dudley Observatory, one of the best-equipped scientific institutions in the country; the State Museum of Natural History, the State Library, two public hospitals and a law school. There are about 60 churches, including the fine cathedral of the Immaculate Conception, and there are numerous educational and benevolent associations. The Hudson river is crossed at A. by two railroad bridges. The most important manufactures are stoves and hollow ware, and it contains manufactories also of flour, furniture, brick, safes, pianos, boilers, machinery, etc., besides more than thirty breweries. The lumber trade stands among the first of the country, being estimated at from \$10,000,000 to \$15,000,000 per annum. A. is also the centre of the cattle trade between the West and New York and New England, and this is worth nearly \$20,000,000 a year. There is a large business done in grain, the N. Y. Central & H. R. r.r. owning here a grain elevator. The city has a board of trade and a board of lumber dealers, and is a port of survey in the U. S. customs district of New York. It has nine

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banks, of which two are national. besides seven savings banks and three private bankers; five fire insurance companies and one life insurance; seven daily papers, twelve weekly and bi-weekly, and six monthlies. A fire department of seven steam fire-engines and appurtenances, and a perfect fire alarm telegraph system gives ample protection against conflagration. The lumber district of A. lies between the Erie canal and the Hudson river, and is more than a mile long, and contains 32 parallel canals for the admission of canal-boats to the different yards. The stove business employs about 4,000 men, and the sales in 1883 amounted to more than \$3,000,000. Water is supplied to the city from lakes and storage reservoirs near West Albany. A very fine piece of public ground, with a pretty lake, is Washington Park, containing about 81 acres of land, and laid out attractively in lawn and garden, with walks and drives and shade trees. Pop. (1870), 69,422; (1880), 90,908.

ALBANY, LOUISA-MARIA-CAROLINE, also ALOYSIA, COUNTESS OF, wife of the unfortunate Prince Charles Edward (q.v.), grandson of James II. of England: 1753-1824; daughter of the Prince Gustavus Adolphus of Stolberg-Gedern, who fell in the battle of Leuthen in 1757. During her married life, bore the name of the Countess of A. She had no children; her marriage proved an unhappy one; and to escape from the ill-usage of her husband, who lived in a state of continual drunkenness, she sought refuge in a nunnery, 1780. At the death of the prince in 1788, the court of France allowed her an annual pension of 60,000 livres. She outlived the house of the Stuarts, which became extinct at the death of her brother-in-law, the Cardinal of York, 1807. She died at Florence, her usual place of residence. Her name and her misfortunes have been transmitted to posterity through the works and autobiography of Alfieri (q.v.), to whom she was privately married. Their remains repose in the same tomb in the Church of Santo Croce at Florence, between the tombs of Macchiavelli and Michael Angelo. See Life by Vernon Lee (1884).

ALBATA, n. *āl-bā-tā* [L. *albātus*, made white—from *albus*, white]: British plate or German silver, consisting of copper, tin, and nickel.

ALBATROSS n. *āl'bā-trōs* [F. *albatros*—from Port. *alcataz*, a sea-fowl]: (*Diomedea*) a genus of web-footed birds of the family of the *Laridæ*, nearly allied to gulls and petrels. Their feet have no hind-toe nor claw; they have a large, strong beak—the upper mandible, with strongly-marked sutures, and a hooked point. The common A. (*D. exulans*), also called the wandering A. is the largest of web-footed birds, the spread of wing (usually 11 ft.) being sometimes 17 ft. and the weight 20 lbs. or upwards. The wings are, however, narrow in proportion to their length. This bird is often seen at a great distance from land, and abounds in the southern seas, particularly near the Cape of Good Hope, whence sailors sometimes call it the Cape Sheep. It often approaches very near to vessels, and is one of the objects of interest to voy-

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agers far away from land, particularly when it is seen sweeping the surface of the ocean in pursuit of flying-fish. It seems rather to float and glide in the air than to fly like other birds, as, except when it is rising from the water, the motion of its long wings is scarcely to be perceived. The plumage is soft and abundant, mostly white, dusky on the upper parts, some of the feathers of the back and wings black. The bill is of a delicate pinky-white, inclining to yellow at the tip. The A. is extremely voracious; it feeds chiefly on fish and mollusca, but has no objection to the flesh of a dead whale, or to any kind of carrion. It is not a courageous bird, and is often compelled to yield up its prey to sea-eagles, and even to the larger kinds of gulls. When food is abundant, it gorges itself, like the vultures, and then sits motionless upon the water, so that it may sometimes be taken with the hand. Not unfrequently, however, on the approach of a boat, it disgorges the undigested food, and thus lightened, it flies off. Its cry has been compared to that of the pelican; it also sometimes emits a noise which has been likened to the braying of an ass. Its flesh is unpalatable. It heaps up a rude nest of earth not far from the sea, or deposits its solitary egg in a slight hollow which it makes in the dry ground. The egg is about four inches long, white, and spotted at the larger end; it is edible. There are seven species of this genus. One of these (*D. fuliginosa*), chiefly found within the Antarctic Circle, is called by sailors the Quaker Bird, on account of the prevailing brown color of its plumage. Albatrosses appear in great numbers, towards the end of June, about the Kurile Islands and Kamtchatka. The Kamtchadales take them by baited hooks, blow up the entrails for floats to their nets, and make tobacco-pipes and various domestic articles of the wing-bones.

ALBAY, *ál-bí'*: town of the island of Luzon, Philippine Islands, cap. of a province of the same name, in the S. end of the island. It is situated about two m. from the Bay of A., which is an excellent harbor, and very near a volcano, also called A., which is in constant activity. Earthquakes are frequent, but the province is very fertile. The town is regularly built, contains some good houses, and has considerable trade. Pop. 13,115.

ALBEIT, conj. *ál'bē-ít* [AS. *all*, *be*, and *it*]: although; notwithstanding.

ALBERONI, *ál-bā-ro'nē*, GIULIO, Cardinal: 1664–1752; b. Firenzuola, in Parma; the son of a poor vine dresser. From being merely a chorister in a church at Piacenza, he quickly rose, through his abilities, to the dignity of chaplain and favorite of Count Roncovieri, Bishop of St. Donino. He was afterwards sent to Madrid as *chargé d'affaires*, by the Duke of Parma, where he gained the favor of Philip V., of Spain, and had the honors successively conferred on him of grandee, cardinal, and prime minister. In this last capacity he was of singularly great service to Spain, overthrowing the intriguing family of Ursini, bringing about the second marriage of Philip V. with Elizabeth Farnese, and stimulat-

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ing the expiring energies of Spain. A new life dawned upon the nation, which learned to forget the hardships it had suffered in the Spanish wars of succession; although, on the other hand, it was principally through his instrumentality that the last liberties and rights of the people were sacrificed in favor of absolutism. He was ambitious, despotie, and unscrupulous; hence, to gratify the covetous desires of his new mistress, he suddenly invaded Sardinia, in violation of the Peace of Utrecht, cherishing the hope of re-establishing the monarchy of Charles V. and Philip II., and startling Europe by his insolent audacity. The regent of France broke off his alliance with Spain, and united himself with England and the emperor; but A. was not dismayed. Even when the Spanish fleet in the Mediterranean was destroyed by an English fleet, he contemplated an extensive war by land, in which all the European powers would have been entangled. He patronized the Pretender, to annoy England, and the French Protestants, to annoy Louis. He sought to unite Peter of Russia and Charles XII. with him to plunge Austria into a war with the Turks, to stir up an insurrection in Hungary, and, through his influence with one of the parties at the French court, he actually accomplished the arrest of the regent himself (the Duke of Orleans). But so universal became the complaints against A., that Philip lost courage, and concluded a treaty of peace, the chief condition of which was that the cardinal should be dismissed, which was effected through the influence of Elizabeth herself, now weary of the arrogance of her late favorite. A. received a command, 1720, Dec. 20, to quit Madrid within 24 hours, and the kingdom within 5 days. Exposed to the vengeance of every power whose hatred he had drawn upon himself, he knew no land whither he could flee. Not even to Rome could he venture, for Clement was more bitterly inimical to him than any secular potentate. He wandered about in disguise, and under fictitious names. At length he was imprisoned in the Genoese territory, through the solicitation of the pope and the Spanish monarch; but he speedily recovered his liberty, and two years after the death of Clement, was reinstated by Innocent XIII. in all the rights and dignities of a cardinal. In 1740 he retired to Placenza, where after 12 years he died at the age of 88. He bequeathed his possessions in Lombardy to Philip V., while his cousin and heir, Cæsar A., became possessor of 1,000,000 ducats.

ALBERT, *âl-bâr'*, ALEXANDER MARTIN: b. Bury (Oise) 1815: member of the Provisional Government of France after the revolution of Feb., 1848. His father was a peasant, and he himself learned a mechanical trade at Paris. He took part in the revolution of July, 1830, and was implicated in the celebrated trial of 1834. He commenced at Lyon the republican journal called *La Gleanuse*, on account of which he was condemned to a fine of 5,000 francs when the insurrection broke out at Lyon. In 1840 he began *L'Atelier*, a paper conducted exclusively by operatives, and devoted to their interests. On the evening before the proclamation of the republic, 1848, Feb., he was making

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buttons in his workshop; and on the nomination of Louis Blanc, he was called to take part in the Provisional Government. He was afterwards chosen president of the Commission for National Rewards, but soon resigned this post. He was elected by a large majority of voices as the representative of the dept. of the Seine in the National Assembly; but involving himself in the attempt of 1848, May 15, against the government as it then existed, he was arrested, and sentenced to transportation. He was, however, soon liberated.

ALBERT, *äl'bert*, COUNT OF BOLLSTÄDT, usually called Albertus Magnus, also Albertus Teutonicus: 1205 (or 1193)–1280; b. Lauingen, Swabia: a man less distinguished for originality than for the extent of his acquirements and his efforts for the spread of knowledge, especially of the works and doctrines of Aristotle. After finishing his studies at Padua, he entered the order of the Dominican friars, and taught in the schools of Hildesheim, Ratisbon, and Cologne, where Thomas Aquinas became his pupil. In 1230 he went to Paris, where he publicly expounded the doctrines of Aristotle, in spite of the prohibition of the church. In 1249, he became rector of the school at Cologne, and in 1254, provincial of the Dominican order in Germany. In 1260, he received from Pope Alexander IV. the bishopric of Ratisbon. But in 1262, he retired to his convent at Cologne, to devote himself to literary pursuits; and here he composed a great number of works, especially commentaries on Aristotle. The fullest edition of his works was prepared by Pierre Jammy, the Dominican (21 vols., Lyon and Leyden, 1651); but it is far from complete. Many of the writings attributed to A. seem spurious; among others, that entitled *De Secretis Mulierum*, which was widely circulated during the middle ages. The extensive chemical and mechanical knowledge which A. possessed, considering the age in which he lived, brought upon him the imputation of sorcery; and in German tradition he has a very ambiguous reputation. It is recorded, for instance, that in the winter of 1240, he gave a banquet in the garden of his convent, at Cologne, to William of Holland, king of the Romans; and that during the entertainment, the wintry scene was suddenly transformed into one of summer bloom and beauty. This myth rests most likely on the fact of A. having had a greenhouse.—The scholastics who followed A.'s opinions took the name of *Albertists*.

ALBERT, FRANCIS (ALBERT) AUGUSTUS-CHARLES-EMMANUEL, Prince of Saxe-Coburg-Gotha, Consort of Victoria, Queen of Great Britain: 1819–61: second son of the late Duke of Saxe-Coburg-Gotha, by his first marriage with Louisa, daughter of the Duke of Saxe-Gotha-Altenburg. The prince was b. 1819, Aug. 26; and after a careful domestic education, with his elder brother, the reigning duke, attended the university of Bonn, where, in addition to the sciences connected with state-craft, he entered with ardor on the study of natural history and chemistry, and evinced great taste for the fine arts, especially painting and

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music. Several of his compositions obtained publicity, and an opera was performed in London said to have been composed by him. Gifted with a handsome figure, he attained expertness in all knightly exercises. It was this accomplished prince that the young queen of Great Britain selected as her partner for life. The marriage was celebrated in London 1840, Feb. 10. On his marriage, Prince Albert received the title of Royal Highness, was naturalized as a subject of Great Britain, and obtained the rank of field-marshal, the knighthood of the Order of the Bath, and the command of a regiment of hussars. As the union proved in the highest degree happy, the prince was loaded with honors and distinctions both by the queen and the nation. The title of Consort of Her Most Gracious Majesty was formally conferred in 1842, and that of Prince Consort, in 1857, made him a prince of the United Kingdom. He was also made a member of the Privy Council, Governor and Constable of Windsor Castle, Colonel of the Grenadier Guards, Acting Grand Master of the Order of the Bath, Chancellor of the University of Cambridge, Master of the Trinity House, etc. Notwithstanding his high and favored position, the prince, with rare prudence and tact, abstained from meddling with state affairs, and thus escaped the jealousy and detraction of parties. When the whig ministry of 1840 proposed for him the income of £50,000, as consort of Queen Victoria, the tories, in conjunction with the radicals, succeeded in limiting the sum to £30,000. This appears to have been the only instance of any manifestation of party feeling with reference to the prince. On the other hand, he opened for himself a wide sphere of action, in the encouragement and promotion of science and art, appearing as the patron of many useful associations and public undertakings. The Exhibition of 1851 owed much to him. He died 1861, Dec. 14. His *Life*, by Theodore Martin, in five vols., appeared 1874-80.

ALBERT, or ALBRECHT, *ál'brékt*, I., Duke of Austria and Emperor of Germany: 1248-1308; eldest son of Rudolph I. Rudolph, about the close of his career, made an effort to have A. appointed his successor; but the electors, tired of his authority, and emboldened by his age and infirmities, refused. After Rudolph's death, Austria and Styria revolted; but A., having vigorously crushed the insurrection, had the audacity to assume the insignia of the empire without waiting for the decision of the diet. This violent measure induced the electors to choose, in preference to him, Adolphus of Nassau. Disturbances in Switzerland, and a disease which cost him an eye, now rendered him more humble; he delivered up the insignia which he had so rashly assumed, and took the oath of allegiance to the new emperor, who, however, after some years, so completely disgusted his subjects, that A. began to entertain hopes of recovering his imperial dignity. In 1298, Adolphus was deposed, and A. elected; but the former having resolved to maintain his title, A. was obliged to fight for the crown. The rivals drew up their forces near Worms, where a battle ensued, in which Adolphus was defeated and slain. A., feeling that

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he might now safely display magnanimity, voluntarily resigned the crown which had been recently conferred upon him; and, as he had anticipated, was unanimously re-elected. His coronation took place at Aix-la-Chapelle, 1298, Aug. But the pope, Boniface VIII., denied the right of the princes to elect A., declared himself to be the only true emperor and legitimate king of the Romans, summoned the former before him, required him to ask pardon and do penance, forbade the princes to acknowledge him, and released them from their oath of allegiance. A., on the other hand, with his usual intrepidity, defied the pope, formed an alliance with Philip the Fair, of France, secured the neutrality of Saxony and Brandenburg, invaded the electorate of Metz, and forced the archbishop to break off his alliance with Boniface and to form one with himself for the next five years. The pope was alarmed by his success, and entered into negotiations with him. A., whose duplicity and unscrupulousness equaled his courage, suddenly broke off his alliance with Philip, admitted the western empire to be a papal grant, and declared that the electors derived their right of choosing from the Holy See. Moreover, he promised upon oath to defend the rights of the Roman court whenever he was called upon. As a reward, Boniface gave him the kingdom of France, excommunicating Philip, and declaring him to have forfeited the crown; but the latter severely chastised the pope for his insolence in daring to give away what was not his own. In the following year, A. made war unsuccessfully against Holland, Zealand, Friesland, Hungary, Bohemia, and Thuringia. Shortly afterwards, the news reached him that a rebellion had broken out among the Swiss in Unterwalden, Schweitz, and Uri, in Jan. 1308. A. had not only foreseen, but desired this, in order that he might find a pretext for completely subjugating the country. A new act of injustice, however, occasioned a crime which put an end to his ambition and life. His nephew, Duke John, claimed Swabia as his rightful inheritance, and had set his claims before A., but in vain. When the latter was departing for Switzerland, the former renewed his demand. A. scoffingly refused; and Duke John resolved to be revenged. With four others he conspired against his uncle's life, and assassinated him on the way to Rheinfelden, while separated from his followers by the river Reuss. The emperor died in the arms of a beggar-woman sitting by the wayside. His daughter Agnes, queen of Hungary, frightfully revenged her father's death. See JOHN, THE PARRICIDE. A. left five sons and five daughters, the children of his marriage with Elizabeth, daughter of the Count of Tyrol.

Five sovereign dukes of Austria (q.v.) bore the name A., of whom two (I. and V.) were also emperors of Germany.

ALBERT THE BEAR (so called, not from any peculiarity of character or appearance, but from the heraldic cognizance that he assumed), Margrave of Brandenburg: 1106-70; one of the most remarkable princes of his age; son and successor of Otho, the rich Count of Ballenstädt, and of Elica, eldest daughter of Magnus, Duke of Saxony. Hav-

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ing proved faithful to the emperor Lothario, he received from the latter Lusace, to be held as a fief of the empire; but the Duchy of Saxony, to which he had the best claim, was given to Henry of Bavaria (1127), the son of the youngest daughter of the duke. As a compensation, A. was made Margrave (Markgraf) of the Northern March or Marck (Salzwedel); but in 1138, Henry having been put under the imperial ban, the duchy reverted to the former, when he took the title Duke of Saxony. Henry, however, again got the upper hand, and A. was compelled to flee, and to content himself with the margraviate of Northern Saxony, and the government of Swabia, which was given him as an indemnity. Returning to his own country, he claimed and secured the lands which he had conquered from the Wends as a hereditary fief of the empire, and thus became the founder and first margrave of the new state of Brandenburg. Under A. the margravedom was afterwards raised to be an electorate, and he himself became Elector of Brandenburg. After he had quelled a revolt of the Wends in 1157, he determined to take extreme measures against the vanquished. He almost depopulated their country, and then colonized it with Flemings. On his return from a pilgrimage to Palestine in company with his wife, in 1159, he exerted himself to suppress the language and paganism of the Wends, and to introduce Christianity among them. He died in 1170, at Ballenstädt, where he was buried. Brandenburg continued in the possession of his descendants for two centuries, and finally (1415) fell to the house of Hohenzollern (q. v.).

ALBERT, last grand-master of the Teutonic Order, and first Duke of Prussia: 1496-1568; son of the Margrave Frederic of Anspach and Baireuth, who having several children, wished him to be a priest. He was educated under the care of Archbishop Hermann, of Cologne, where he became canon. He did not, however, neglect knightly exercises. He accompanied the emperor Maximilian I. in his expedition against Venice, and was present at the siege of Pavia. In 1511, when scarcely 21 years old, he was chosen grand-master of the Teutonic Order, the knights expecting their feudal allegiance to Poland to be abolished, on account of his near relationship to Sigismund, the monarch of that country, while they also hoped for protection against the latter from his friends in Germany. He was consecrated at Mergentheim, with his father's consent. In 1512 he removed to Königsberg, having been acknowledged by Poland likewise; but refusing to take the oath of allegiance, he was brought into a war with Sigismund in 1520. The next year, a four-years' truce was agreed to at Thorn. A. next made his appearance at the imperial diet at Nürnberg, as a German prince of the empire, to induce the other princes to assist him against the Poles. But Germany could at that time grant no assistance to any one. Disappointed in his hopes, A. threw himself into the cause of the Reformation, which had rapidly spread into Prussia, and broken the last strength of the declining order, whose possessions now appeared a certain prey to Poland. A. still hoped to preserve these, by

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acting upon Luther's advice, which was, to declare himself secular Duke of Prussia, and place his land under the sovereignty of Sigismund. This was done with great pomp at Cracow, 1525, April 8, the duchy being secured to him and his descendants. During the remainder of his life, A. zealously sought to further the welfare of his duchy. He regulated the administration of all affairs, both secular and ecclesiastical, established, the ducal library, founded in 1543 the Univ. of Königsberg, gathered many literary men around him, and caused their works to be printed. In 1527, he married Dorothea, daughter of Frederick, king of Denmark. A. earnestly desired peace, but his was not an age in which peace could be purchased. It was a transition period from the old to the new, and the duke found himself entangled in conflicts with the nobles, and in theological disputes, which, with other troubles of a more personal character, saddened the close of his life. See PRUSSIA.

ALBERT, Archbishop of Magdeburg, and Elector of Mentz, generally called A. of Brandenburg: 1489-1545; younger son of the elector John Cicero, of Brandenburg. In 1513, he became Abp. of Magdeburg; in the same year, also, Administrator of the bishopric of Halberstadt, and in the following year, Abp. and Elector of Mentz. Leo X. having granted him permission to sell indulgences, on condition that he should deliver up half the booty to the papal exchequer, A. appointed the Dominican Tetzl 'indulgence preacher,' who by the shameless manner in which he went about his work, first stirred Luther to post up his well-known ninety-five theses. Even in the archbishop's own diocese, the reformer's doctrines found not a few adherents, so that A. was compelled, at the imperial diet at Augsburg, to act the part of peace-maker. When he joined the Holy Alliance against the Treaty of Schmalkald, Luther made a fierce attack on him in writing. He was the first of all the German princes who received the Jesuits into his dominions. In 1541, he granted religious liberty to his subjects, under the condition that they should pay his debts, amounting to 500,000 florins. He did this, not from any love of religious liberty, but either because of the consideration referred to, or from a dread of popular compulsion. The last days of his life were spent in Aschaffenburg.

ALBERT, or ALBRECHT, Archduke of Austria; 1550-1621; third son of the emperor Maximilian II.; brought up at the Spanish court, and dedicated himself to the church. In 1577, he was made cardinal; in 1584, Abp. of Toledo, and, 1594-96, held the office of viceroy of Portugal. He was next appointed Stadtholder of the Netherlands, where, as the representative of the Spanish monarch, he discharged the duties of his function with prudence and dignity. Cardinal Bentivoglio, who resided a considerable time at his court, praises his uprightness, his moderation, his love of serious study, his industry, his perseverance, and his discretion, though he does not conceal the fact that he was a prince better fitted for peace than for war. He showed at first both courage and enthusiasm, but afterwards was

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accused of dilatoriness and timidity. Meanwhile, he did not receive from Spain the promised help; and, moreover, affairs had reached such a pitch that they could hardly become worse. A., however, did the best that could be done. His mild, moderate, and unpersecuting character, essentially contributed to the re-establishment of the Spanish authority in the Netherlands. Philip employed him to mediate amid the disturbed provinces. A. now abandoned his ecclesiastical profession, and married (1598) the Infanta, Isabella, who received the Netherlands for her dowry.

ALBERT COAL or **ALBERTITE**, *ál'ber-tit*: a bituminous mineral found in Albert county, in the province of New Brunswick, N. Amer.

ALBERT N'YANZA, -*nī-ăn'zǎ* (the Little Luta Nzige of Speke): large lake of East Central Africa, one of the reservoirs of the Nile, situated in a deep rock-basin, 80 m. w. of the Victoria N'yanza. The A. N. is of oblong shape, and, as proved by M. Gessi, one of Col. Gordon's party in 1876, is 140 m. long from n. to s., and 40 m. broad. It is crossed by the equator near its centre. On the e. it is fringed by precipitous cliffs, having a mean altitude of 1,500 ft., with isolated peaks, rising from 5,000 to 10,000 ft. The surface of the lake is 2,720 ft. above the sea, and 1,470 ft. below the general level of the country; its water is fresh and sweet, and it is of great depth towards the centre. The n. and w. shores are bordered by a massive range of hills, called the Blue Mountains, which have a height of about 7,000 ft. The existence of this vast lake first became known to Europeans through Speke and Grant, who, 1862, heard of the Luta Nzige as a narrow reservoir forming a shallow back-water of the Nile. See map to article NILE. When Speke and Grant, after the discovery of the Victoria N'yanza, were, 1863, descending the Nile on their return to Europe, they met, at Gondokoro, Mr. (now Sir) Samuel White Baker (q.v.), who was ascending the river in the hope of meeting with and aiding these travellers. As soon as they informed him of the reputed great lake, Baker agreed to undertake its exploration. Joining a trading party, he travelled s.e. to Latooka, which he describes as the finest country he had seen in Africa. His course was now s. and s.w., through the countries of Obbo and Madi, crossing the Asua, a tributary of the Nile, 1864, Jan. 9. Journeying next in a s. and s.e. direction over uninhabited prairies and swampy hollows, he came upon the Nile at the Karuma Falls, lat. 2° 17' n., at the identical spot where it had been crossed by Speke and Grant. Being prevented by the jealousy of King Kamrasi from following the course of the stream to the w., he was forced to proceed, by slow marches southward on the w. side of the Somerset or Nile, to M'rooli, leaving which, his course lay s.w. on the s. side of the Kafoor river. After a toilsome march of 18 days from M'rooli, the party came in sight of a glorious expanse of water. Baker says: 'Weak and exhausted with more than twelve months' anxiety, toil, and sickness, I tottered down the steep and zigzag path, and in about two hours reached

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the shore. The waves were rolling upon a bank of sand; and as I drank the water, and bathed my face in the welcome flood with a feeling of true gratitude for success, I named this great basin the Albert N'yanza, in memory of a great man who had passed away.'

The spot where the party first reached the lake, Vacovia, is in lat. $1^{\circ} 14' \text{ n.}$, $30^{\circ} 40' \text{ e.}$ Embarking thence in canoes, the party coasted n.e. and in 13 days arrived at Magungo, lat. $2^{\circ} 16' \text{ n.}$, near the mouth of the Somerset river. At this part, the lake was under 20 m. in width, and appeared to stretch away in a n.w. direction. From Magungo, 250 ft. above the lake, the travellers had a view of the Nile Valley for 15 or 20 m. n. Ascending the Somerset, at a distance of 25 m. from its mouth, the canoe-voyage was interrupted by a grand cataract 120 ft. high, which was named the Murchison Falls. The explorers proceeded s.e. for about 30 m. to Kisoona, and then a march n.e. for about the same distance brought them to the Karuma Falls, where they first entered the lake region. The name Somerset is adopted from Speke's first map, in order to distinguish that river from the Nile proper. It issues from the Victoria N'yanza at the Ripon Falls, and flowing n.w. and w. for about 230 m., it enters the A. N. within 30 m. of its n. extremity, and soon quits it to form the true Nile. From the Ripon Falls for 30 m. n., and from the Karuma to the Murchison Falls, 45 m., the Somerset forms a series of rapids. The A. N. receives the drainage of a great equatorial mountain range, where rain falls during ten months of the year. The scenery of the lake is described as extremely beautiful. Salt, which is very abundant in the soil on the e. shores of the lake, is now the only article of trade to the inhabitants. Formerly, Magungo was a large town, when the trade from Karague, in lat. 2° s. was conducted in large boats sent by Rumanika, the king of the country, with cowrie shells and brass bracelets from Zanguebar, to be exchanged for ivory.

ALBERTUS MAGNUS: see **ALBERT OF BOLLSTÄDT.**

ALBESCENT, a. *äl-bēs'ěnt* [*L. albes'cens*, or *albescen'tem*, growing white—from *albus*, white]: growing white; moderately white; in *bot.*, having a pale tinge or hoary appearance. **ALBICANT**, a. *äl'bī-kánt* [*L. al'bicans*, being white]: growing whitish,—in same sense as preceding.

ALBI, *äl'bē* or *äl-bē'*: cap. of the dept. of Tarn, France; is built on a height. It is very old, and suffered greatly during the religious wars which devastated the land in the time of the Albigenses. Besides the usual government offices, it has a public library of 12,000 vols., and a museum. The chief buildings are the cathedral, built in the style of the 18th c., the old palace of the Count of Albigeois, and the theatre. There is considerable trade in corn, wine, fruit, etc.; and linen, cotton, woolen, and leather manufactures. Pop. (1881) 16,914.

ALBIGENSES, n. plu. *äl'bī-jě'n'sēz* [the town called by the Romans *Albigi*]: a sect or party who separated from the Church of Rome in the twelfth century, so called from Al-

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bigeois, a district and diocese in Languedoc, France, where they first arose,—not to be confounded with the *Waldenses*, who were a different sect, and arose at a different time, and lived in a different part of France.

ALBIGENSES: name applied loosely to the so-called 'heretics,' belonging to various sects, that abounded in the s of France about the beginning of the 13th c. The chief sect was the Cathari (q.v.); but they all agreed in renouncing the authority of the popes and the discipline of the Roman Church. The name arose from the circumstance that the dist. of Albigeois in Languedoc—now in the dept. of Tarn, of which Albi is the cap.,—was the first point against which the crusade of Pope Innocent III. (1209) was directed. The immediate pretense of the crusade was the murder of the papal legate and inquisitor, Peter of Castelnau, who had been commissioned to extirpate heresy in the dominions of Count Raymond VI. of Toulouse; but its real object was to deprive the count of his lands, as he had become an object of hatred from his toleration of the heretics. It was in vain that he had submitted to the most humiliating penance and flagellation from the hands of the legate Milo, and had purchased the papal absolution by great sacrifices. The legate, Arnold, Abbot of Citeaux and Milo, who directed the expedition, took by storm Beziers, the capital of Raymond's nephew, Roger, and massacred 20,000—some say 40,000—of the inhabitants, Catholics as well as heretics. 'Kill them all,' said Arnold; 'God will know his own!' Simon, Count of Montfort, who conducted the war under the legate, proceeded in the same relentless way with other places in the territories of Raymond and his allies. Of these, Roger of Beziers died in prison, and Peter I. of Aragon fell in battle. The conquered lands were given as a reward to Simon of Montfort, but he never came into quiet possession of the gift. At the siege of Toulouse (1218) he was killed by a stone, and counts Raymond VI. and VII. disputed the possession of their territories with his son. But the papal indulgences drew fresh crusaders from every province of France, to continue the war. Raymond VII. continued to struggle bravely against the legate and Louis VIII. of France, to whom Montfort had ceded his pretensions, and who fell in the war in 1226. After hundreds of thousands had perished on both sides, a peace was concluded, 1229, at which Raymond purchased relief from the ban of the church by immense sums of money, gave up Narbonne and several lordships to Louis IX., and had to make his son-in-law, the brother of Louis, heir of his other possessions. These provinces, hitherto independent, were thus, for the first time, joined to the kingdom of France, and the pope sanctioned the acquisition, in order to bind Louis more firmly to the papal chair, and induce him more readily to admit the Inquisition. The heretics were handed over to the proselytizing zeal of the order of Dominicans, and the bloody tribunals of the Inquisition; and both used their utmost power to bring the recusant A. to the stake, and also, by inflicting severe punishment on the penitent converts, to inspire dread of incurring the church's displeasure.

ALBINO—ALBOIN.

From the middle of the 13th c. the name of the A. gradually disappears. The remnants of them took refuge in the east, and settled in Bosnia. See Hahn, *Geschichte der Ketzerei im Mittelalter* (1845); Schmidt, *Histoire et doctrine de la secte des Cathares ou Albigeois* (Strasb. 1849); and Peyrat, *Histoire des Albigeois* (2 vols., Paris, 1882).

ALBINO, n. *äl-bi'nō* [Port. *albino*, an albino—from L. *albus*, white]: a person, or any animal, with white hair and red eyes, arising from the absence of pigment-matter; said to have been originally applied to white negroes, found by the Portuguese on the w. coast of Africa. **ALBINISM**, n. *äl'bīn-izm*, state of being an albino; in bot., a pale or whitish condition of a plant, owing to the absence of chlorophyll.

ALBINOS—called also *Leucæthiopes*, or white negroes, and by the Dutch and Germans *Kakerlaken*: at one time considered a distinct race; but closer observation has shown that the same phenomenon occurs in individuals of all races, and that the peculiar appearance arises from an irregularity in the skin, which has the name of *leucopathy* or *leucosis*. It consists in the absence of the coloring matter which, in the normal state, is secreted between the cuticle and the true skin, and also of the dark pigment of the eye; so that the skin has a pale, sickly white color, while the iris of the eye appears red, from its great vascularity. As the pigment in the coats of the eye serves to diminish the stimulus of the light upon the retina, A. generally cannot bear a strong light; on the other hand, they see better in the dark than others. The coloring matter of the hair is also wanting in A., so that their hair is white. All these differences are of course more striking in the darker varieties of the species, and most of all in the negro albinos.

Albinoism is always born with the individual, and occurs not only in men, but also in other mammalia, in birds, and probably in insects. It is not improbable that the peculiarity may, to some extent, be hereditary. The opinion that A. are distinguished from other men by weakness of body or mind is completely refuted by facts.

ALBION, n. *äl'bī-ōn* [L. *albus*, white,—but probably from a native Celtic word]: the most ancient name on record of the island of Great Britain: frequently used in poetry—so called from the appearance of the white chalk cliffs on its coast to persons coming from the Continent. See **ALBANY** or **ALBAINN**.

ALBITE, n. *äl'bit* [L. *albus*, white]: a variety of felspar of a grayish-white or milky-white color.

ALBOIN, *äl'boyn*: founder of the Lombard dominion in Italy; succeeded his father, 561, as king of the Lombards, who were at that time settled in Pannonia; d. 574. His thirst for action first vented itself in aiding Narses against the Ostrogoths; afterward, in a war with the Gepidæ, whom he, with the Avari, defeated in a great battle (566), slaying their king, Cunimond, with his own hand. On the death of his first wife, Klodoswinda, he married Rosamond, daughter of Cunimond, who was his prisoner. Some of his warriors, who had accompanied Narses into Italy.

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brought back reports of the beauties and riches of the country. This determined A., 568, to enter Italy with his own nation of Lombards, the remains of the Gepidæ, and 20,000 Saxons. He soon overran and subdued the n. of the country as far as the Tiber, fixing his principal residence at Pavia, which long continued to be the cap. of the Lombards. A.'s barbarity cost him his life. During a feast at Verona, he made his queen drink out of the skull of her father, which he had converted into a wine-cup. In revenge, she incited her paramour to murder her husband, 574. Strangely, A. was a just and beneficent ruler. He was beloved by his subjects, whom he stimulated into that vital activity that characterized their descendants for ages. For several centuries his name continued to be illustrious among the German nations, who celebrated his praises in martial songs. To escape the fury of the Lombards, Rosamond fled with her associate and the treasure to Longinus, the exarch, at Ravenna. Longinus becoming a suitor for her hand, she administered poison to Helmichis, her paramour, who, discovering the treachery, caused her to swallow the remainder of the cup, and die with him.

AL-BORAK, n. *āl-bō-rāk'* [Ar. *al*, and *boraka*, to shine, to flash; *borak*, lightning]: the winged creature having the face of a man on which Mohammed is said to have journeyed or flown to Jerusalem and heaven; others say 'a white mule.'

ALBORNOZ, *āl-bor-noth'*, ÆGIDIUS ALVAREZ CARILLO: a warlike prelate of the middle ages; b. Cuença, d. 1367. He studied at Toulouse, and subsequently became almoner to Alfonso XI., king of Castile, who appointed him Archdeacon of Calatrava, and finally Abp. of Toledo. He took part in the wars against the Moors, saved the life of the king in the battle at Tarifa, and was present at the siege of Algeciras, where the king dubbed him knight. On account of the Christian boldness with which he denounced the criminal excesses of Peter the Cruel, he fell into disgrace, and had to flee to Pope Clement VI., at Avignon, who made him a cardinal. Innocent VII. also recognized his political talents, and sent him as cardinal-legate to Rome, where, by his tact and vigor, he secured, in spite of the intricate complication of affairs, the restoration of the papal authority in the states of the church (1353-62). Pope Urban V. owed the recovery of his dominions to him, and out of gratitude appointed him legate at Bologna in 1367. In the same year he died at Viterbo, but expressing a wish to be buried at Toledo, almost royal honors were rendered to his dead body by the Spanish monarch, Henry of Castile, and Urban even granted an indulgence to all who had assisted in the transference of his remains from Viterbo to Toledo. He left a valuable work upon the constitution of the Romish Church, printed first at Jesi, 1473; now very rare.

ALBOSTAN, *āl-bos-tân'*: town of Asiatic Turkey, in the pashalic of Marash, 39 m. n.e. by n. from Marash. Pop. est. 9,000.

ALBOX, *āl-boh'*: town of Andalusia, Spain, province of

ALBUERA—ALBUM.

Almeria, 42 m. n.e. from Almeria, on a small affluent of the Almanzora, which divides the town into two parts. It has some good streets and buildings, and a fine square. Blankets, coarse linen and hempen fabrics, and earthenware are manufactured. There are also corn and oil mills. There is a great annual fair in Nov., lasting for a fortnight. Pop. 9,430.

ALBUERA, *ál-bó-á'rá*: an insignificant hamlet, in the Spanish province of Estremadura, famous for the battle, 1811, May 16, between the combined English, Spanish, and Portuguese forces under General Beresford; and the French under Marshal Soult, who were scarcely so numerous, but had abundant artillery. The object of the latter was to compel the English to raise the siege of Badajoz. The result was, that Soult was obliged to retreat to Seville, with the loss of 9,000 men; the loss of the allied forces was about 7,000. In proportion to the numbers engaged, the battle was the most sanguinary in the whole contest. The French had at first got possession of a height which commanded the whole position of the allied army, but they were driven from it by 6,000 British, only 1,500 of whom reached the top unwounded.

ALBUFERA, *ál-bó-fá'rá* [an Arabic word meaning 'The Lake']: lake near Valencia, Spain, about 10 m. in length and the same in breadth, divided from the sea by a narrow tongue of land; a canal connects it with the city of Valencia. It is rich in fish and fowl, and is said to have been excavated by the Moors. From it Marshal Suchet (q.v.) took the title of Duke.

ALBUGINEOUS, a. *ál'bū-jín'ě-ūs* [L. *albūgo*, or *albū-gīnēm*, a white spot—from *albus*, white]: like the white of an egg. **ALBUGO**, n. *ál-bū'gō*, a white opacity of the cornea; the white of the eye.

ALBUGO, *ál-bū'gō*: term employed in surgery to designate the white opacity that often follows ulceration of the cornea of the eye. In infancy, the comparatively rapid interchange of materials will often diminish to a great extent both the extent and density of these spots; but in after-life, they do not undergo similar absorption, nor are they amenable to surgical relief.

ALBUM, n. *ál'būm* [L. *album*, a white color, a white tablet—from *albus*, white—*lit.*, a book or tablet, white or unwritten upon]: a scrap-book; a memorial book. **ALBUM GRÆCUM**, n. *ál'būm grē'kūm* [L. *Græcum*, of or belonging to Greece]: Greek-white; the whitish hardened excrements of dogs, wolves, etc.—formerly used in medicine under that name, now partially used by tanners.

ALBUM: among the Romans, a white tablet overlaid with gypsum, on which were written the *Annales Maximī* of the pontifex, edicts of the prætor, and rules relative to civil matters. It was so called, either because it was composed of a white material, or because the letters used were of that color. To tamper with the names written on an A. was a serious offense, and involved a severe penalty. In

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the middle ages, the word was used to denote any list, catalogue, or register, whether of saints, soldiers, or civil functionaries. In the gymnasia and universities on the continent, the list of the names of the members is called the A. The name is also applied to the 'black board' on which public notifications of lectures, etc., are written up. But its popular signification in modern times is that of a book for containing photographs, or a blank-book for a drawing-room table, and intended to receive fugitive pieces of verse, or the signatures of distinguished persons, or sometimes merely drawings, prints, marine plants, etc.

ALBUMEN, n. *äl-bū'měn* [L.—from *albus*, white]: the white of an egg; white matter resembling intimately the white of eggs; in *bot.*, the substance contained in seeds for the nutrition of the young plant. **ALBUMENIZE**, v. *äl-bū'měn-iz*, to saturate or cover with albumen. **ALBUMENIZED**, pp. *-izd'*: **ADJ.** prepared with a coating of albumen, as *albumenized* paper. **ALBUMINOUS**, a. *äl-bū'mi-nūs*, having the nature of albumen. **ALBUMINOIDS**, n. plu. *äl-bū'min-oydz* [Gr. *eidos*, resemblance]: a group of substances found in all plants and animals in a greater or less degree, of which *albumen* and *fibrin* may be regarded as typical examples; proteine bodies. **ALBUMINOSE**, a. *-mi-nūs*, the soluble portion of fibrin. **ALBUMINURIA**, n. *äl-bū'mi-nūr'i-ä* [Gr. *ouron*; L. *urina*, the urine]: a diseased state in which albumen may be detected in the urine; a term indicative of the presence of albumen in the urine.

ALBUMEN: an organic compound, found both in animal and in vegetable substances. It forms the chief ingredient in the white of egg, and abounds in the blood and chyle, and more or less in all the serous fluids of the animal body; it exists also in the sap of vegetables, and in their seeds and other edible parts. A. forms the starting-point of animal tissues, for in an egg during incubation all the parts of the chick are formed out of it. The organized substances, fibrine and caseine, have a chemical composition similar to A.; and hence, with A., they are called albuminous compounds. A. may be considered the raw material of fibrine, and fibrine as animalized A.

The chief component elements of A. are carbon, hydrogen, nitrogen, and oxygen, with small proportions of phosphorus and sulphur. It is believed to be a definite chemical compound, though the exact proportions and the rational formula have not been definitely ascertained. Carbon forms about 54 per cent. of it; nitrogen, 16; and sulphur, 2. It is the sulphur of the A. that blackens silver when brought in contact with eggs, and the smell of rotten eggs arises from the formation of sulphuretted hydrogen during the decomposition.

A. is soluble in water, and in such a state of solution is found in the egg, the juice of flesh, the serum of blood, and the juice of vegetables; but when heated from 140° to 160° it coagulates, and is no longer soluble in water. With bichloride of mercury (corrosive sublimate) sulphate of

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copper (blue vitriol), acetate of lead (sugar of lead), nitrate of silver (lunar caustic), it forms insoluble compounds, and is therefore used as an antidote to these poisons. The property of coagulating with heat adapts A. for the purpose of clarifying in sugar-refining and other processes. The A. is added to the liquid in the cold state, allowed to mix thoroughly therein, and then, when heated, it coagulates, entangling and separating all the impurities suspended in the liquid. A. is likewise coagulated by the majority of the mineral acids, but not by acetic acid. Alcohol, ether, creosote, and tannic acid likewise cause the coagulation of A., and hence the efficacy of these substances, especially the two latter, in coagulating and thereby killing the nerves which cause so much pain in toothache. For A. as an element in diet, see Food.

ALBUMEN, in Botany: a store of nutritive matter, distinct from the embryo, but inclosed with it within the integuments of the seed. It is also known by the names *Perisperm* and *Endosperm*. When a seed has a store of A. separate from the embryo, it is said to be *albuminous* or *perispermic*. When the nutritive matter is stored up in the cotyledons or lobes of the seed itself, as in the bean, pea, wall-flower, etc., the seed is said to be *exalbuminous* or *aperispermic*. In these the A., as a distinct part of the seed, is wanting, and the entire seed consists of embryo and integument. When the A. is present, it is sometimes very small, as in the nettle; in other instances, on the contrary, it is very much larger than the embryo, as in the cocoa-nut, of which it forms the edible part. It is also the edible or useful part of many other seeds—as in the different kinds of corn—and in coffee, nutmeg, etc. It is sometimes *mealy* or *farinaceous*, as in the cereals; *oily*, as in the poppy; *horny*, as in coffee; *cartilaginous*, as in the cocoa-nut; *mucilaginous*, as in the mallow. Vegetable ivory is the A. of a palm (genus *Phytelephas*) which grows on the banks of the Magdalena, and is used in place of ivory. The presence or absence, and various peculiarities of A., afford botanical characters of great value. The A. appears to be a store provided for the nourishment of the embryo, and consists of starchy, oily, and albuminous matter. *Vegetable A.*, in a chemical sense, exists, often in large quantity, even in seeds which, according to the language of descriptive botany, are exalbuminous or destitute of A.; and to prevent confusion, *perisperm* has begun to be employed as the botanical term, though not yet in general use.

ALBUMINURIA: see BRIGHT'S DISEASE.

ALBUÑOL: *ál-bón-yól'*: town in Spain, province of Granada, 41 m. s.e. from Granada, about 8 m. from the coast of the Mediterranean. It is a well-built town, with clean paved streets. The surrounding district abounds in vineyards, and is also very productive of figs and almonds. The making of wine and brandy, and the drying of raisins, are the chief occupations of the inhabitants of the town itself. The port of A. is a small place called La Rabitá. Pop. of A. 8,764.

ALBUQUERQUE—ALBURNUM.

ALBUQUERQUE: *ál-bó-kèr'kā*, town of Bernalillo co., New Mexico, on the left bank of the Rio Bravo del Norte, 41 m. s.s.w. from Santa Fé. Pop. (1870) 1,307; (1880) 2,315.

ALBUQUERQUE: town of Estremadura, Spain, province of Badajoz, 24 m. n. from Badajoz. It is a decaying place. Cotton and woolen fabrics are manufactured; also earthenware, soap, and chocolate. The neighborhood is fruitful, producing corn, wine, oil, flax, honey, and fruits. Pop. 7,470.

ALBUQUERQUE, *ál'bu-kérk* or *ál-bó-kèr'kā*, **ALFONSO THE GREAT**, viceroy of the Indies, called also the Portuguese Mars: 1453-1515; b. near Alhandra, not far from Lisbon, of a family of the royal blood of Portugal. In that age, the Portuguese were distinguished for heroism and a spirit of adventure. They had discovered and subjugated a great part of the w. coast of Africa, and were beginning to extend their dominion over the seas and the people of India. A. being appointed viceroy of these new possessions, went to the coast of Malabar, 1503, Sep. 26, with a fleet and some troops; conquered Goa, which he made the seat of the Portuguese government, and the centre of its Asiatic commerce; and afterwards the whole of Malabar, Ceylon, the Sunda Isles, the peninsula of Malacca, and (1515) the island of Ormuz at the entrance of the Persian Gulf. When the king of Persia sent for the tribute which the princes of this island had formerly rendered to him, A. presented bullets and swords to the ambassador, saying: 'This is the coin with which Portugal pays her tribute.' He made the Portuguese name profoundly respected among the princes and people of the east; and many of them, especially the kings of Siam and Pegu, sought his alliance and protection. All his undertakings bore the stamp of an extraordinary mind. He maintained strict military discipline, was active, far-seeing, wise, humane, and equitable, respected and feared by his neighbors, while beloved by his subjects. His virtues made such an impression on the Indian people, that long after his death, they resorted to his grave, to implore his protection against the misgovernment of his successors. Notwithstanding his valuable services, A. did not escape the envy of the courtiers and the suspicions of King Emmanuel, who appointed Lopez Soarez, a personal enemy of A., to supersede him as viceroy. This ingratitude affected him deeply. Ismaël, the shah of Persia, offered his assistance to resist the arbitrary decree of the Portuguese court; but A. would not violate his allegiance. A few days afterwards, commending his son to the king in a short letter, he died at sea near Goa, 1515, Dec. 16. Emmanuel honored his memory by a long repentance, and raised his son to the highest dignities in the state. His life is well portrayed in the *Commentarios do Grande Alfonso de A.* (Lisbon, 1576 and 1774), pub. by his son Blasius.

ALBURNUM, n. *ál-bér'nüm* [L.—from *albus*, white]: or **SAP-WOOD**, in Botany: that part of the wood of exogenous trees which is still imperfectly hardened; and, consisting of the woody layers most recently formed, is interposed

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between the *bark* (q.v.) and the *heart-wood* or *duramen* (q.v.). There is often a very marked division between it and the *duramen*, in trees whose age is such that the latter has been perfected. The A. differs from the *duramen* in having its tubes still open for the passage of fluids; and these tubes appear to be the vessels which chiefly serve for the ascent of the sap. See *SAP*. It gradually hardens, and is transformed into *duramen*, new layers being added externally. It is almost always of a white or very pale color, while in many trees the *duramen* is highly colored. The A. is pale even in ebony, in which the *duramen* is black. In general, the A. is much inferior in value to the hardened or perfected wood, and the different proportions which they bear to each other in the thickness of the stem, go far to determine the relative values of some kinds of trees. These proportions, however, are different not only in trees of different kinds, but even in trees of the same kind at different ages, and according as circumstances have been favorable or otherwise to rapidity of growth. When there is a great proportion of A., the wood dries slowly and with difficulty, owing to the quantity of sap it contains.

AL'CA and ALCADÆ: see *AUK*.

ALCÆUS, *āl-sē'us*, of Mitylene: end of B.C. 7th c. or beginning of 8th; one of the greatest lyric poets of Greece. His odes, in the Æolic dialect, are occupied with his grief for the dissensions of his country, his hatred of tyrants, his own misfortunes, and the sorrows of exile; while on other occasions he celebrates the praises of love and wine. He is said to have been an admirer of Sappho, who was a contemporary. A. himself took part in the civil war, first as the coadjutor of Pittacus, but afterwards against him when he proved tyrannical. Being banished from Mitylene, he endeavored, at the head of the other exiles, to force his way back; but fell into the hands of Pittacus, who, however, granted him his life and freedom. He was the inventor of the form of verse which, after him, is called the *Alcaic*, and which Horace, the happiest of his imitators, transplanted into the Latin language. Of the ten books of A.'s odes, only fragments remain, collected in the *Cambridge Museum Criticum*, and in Bergk's *Poetæ Lyrici Græci* (Leip. 1848).

ALCAHEST, or ALKAHEST, n. *āl'kă-hĕst'* [Ar.]: a pretended universal solvent. See *ALCHEMY*.

ALCAIC, a. *āl-kă'ik*, relating to Alcæus, or to the verse invented by him: N. a Greek metre, consisting of five feet —viz., a spondee or iambic, an iambic, a long syllable, and two dactyls.

ALCAID, or ALCADÉ, or ALCAYDE, n. *āl-kăd'* [Sp. *alcaide*; F. *alcade*; Ar. *al-qûid*]: Moorish title applied in Spanish and Portuguese usage to a military commander of a fortress or prison.

ALCALA DE GUADAIRA *āl-kă-lă' dă gwă-dī-ră* [*The Castle of the Guadaira*], the ancient Carthaginian *Hienippa* ('place of many springs'): town of Andalusia, Spain, prov. of Seville; 7 m. e. by s. from Seville. It stands

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near the Guadaira, partly on a hill, so that some of the streets are very steep, and is overlooked by the ruins of an ancient Moorish castle, once one of the most important, as its ruins are among the finest, in Spain. This town is beautifully situated, and on account of the salubrity of its climate, is much resorted to as a summer residence by the inhabitants of Seville. It is celebrated for producing the finest bread in Spain; there are more than fifty bakeries in the town, and Seville is chiefly supplied from it. The water-mills and mule-mills for making flour are more than 200 in number, and, with the bakeries, give employment to great part of the population. Every process connected with the making of bread is conducted with the greatest care. Seville is also supplied with water from the hill above A., which is perforated by tunnels, some of them 6 m. in length, forming underground canals. Some of the tunnels are believed to be Roman works, but most of them are known to have been made by the Moors. The water flowing through the subterranean canals is as clear as crystal. The neighborhood of A. is fertile, producing corn, wine, oil, silk, honey, and fruits, also sheep and oxen. Pop. 8,000.

ALCALA DE HENARES, -ân-â'rès [*El Calaat*, in Arabic, means 'the castle']: town in Spain, prov. of New Castile; on the Henares, 22 m. from the cap. It is built in the old style, and boasts of a university, founded by Cardinal Ximenes in 1510, whose world-wide fame was formerly second to that of Salamanca alone. When Francis I. visited it, while a prisoner in Spain, he was welcomed by 11,000 students. The library contains the original of the celebrated polyglot Bible which was printed in this town, and called the Complutensian, from the ancient name of the place (Complutum). A. has, besides, a military academy, and a celebrated powder and leather factory. It is said to have been the birthplace of Cervantes, and various other distinguished persons. Pop. 12,000.

There are several other towns in Spain having the name **ALCALA**: as A. of Chisberte, in Valencia (pop. 6,000): A. de Guadaira, near Seville (8,000): and A. la Real, in Jaen (16,000), producing superior wine, fruit, sheep, etc.

ALCALA LA REAL, -lâ rā-âl' [*The Royal Castle*]: city of Andalusia, Spain, prov. of Jaen; 26 m. n.w. from Granada. It is on a conical hill, in a narrow valley, on the n. side of the mountains which separate the province of Jaen from that of Granada, and is nearly 3,000 ft. above the sea. It is a very picturesque town, irregularly built, with steep and narrow streets and bold towers. It was the stronghold of the Alcaide Ibn Zaide; and being taken, 1340, by Alonso XI. in person, it obtained the name *Real*. It has a hospital, formerly an abbey, a very fine building. The neighborhood produces grain and fruits of the finest quality, and the inhabitants of the town are mostly engaged in agriculture. There is some trade in wine and wool. Pop. 15,901.

ALCALDE, n. âl-kâl'dê [Sp. *alcalde*: Ar. *al-kâdi*, the judge]: the general title of judicial and magisterial office in

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Spain, the special function being denoted by another term. Thus, there are *alcaldes de aldea*, village-justices; *alcaldes pedaneos*, justices of the peace; *alcaldes de corte*, judges of the court, etc.

ALCAMO, *ál-ká-mō*: town of Sicily, prov. of Trapani; 23 m. e. from Trapani, in the Val di Mazzara, on the high-road between Palermo and Trapani. It is said to have been founded by the Arabs, on their first invasion of Sicily in 827. The original town stood on a hill, and long retained a Moslem population, who were driven out by the emperor Frederick II. 1233, and the new town was built at the foot of the hill. A. is surrounded by a battlemented wall of the 14th c. The houses are mostly mean, and the streets irregular and dirty, the whole place having an air of poverty and decay. It contains, however, some fine old churches and palaces. Pop. (1881) 37,697.

ALCAÑIZ, *ál-kán-yēth'*: town of Aragon, Spain, prov. of Teruel, 63 m. s.e. from Saragossa; on a rising ground on the right bank of the Guadalupe, here crossed by a bridge of nine arches. It is well built, with wide paved streets, and a number of squares. It has a magnificent collegiate church, in which are many fine tombs and pictures. There are manufactures of silk, woolen, and coarse linen fabrics, hats, and soap; there are also flour and oil mills, and some trade in grain, cattle, and the manufactures of the town. Pop. 7,400.

ALCANTARA, *ál kán'tá-rá*: seaport town of Brazil, prov. of Maranhão; 17 m. n.w. from Maranhão, near the mouth of the bay of St. Marcos. Most of the houses are of only one story. The more wealthy residents are mostly cotton-planters; the poorer classes live chiefly by fishing, and by making hammocks of some of the peculiar fibres of the country. There are salt-pits not far from the town. Cotton, rice, and salt are exported. Pop. 10,000.

ALCANTARA, *ál-kán'tá-rá* [*Al-kantarah*, Arabic, 'the bridge']: the Norba Cæsarea of the Romans, an old fortified Spanish town, built by the Moors in the prov. of Estremadura. It was plundered by the French under Gen. Lapisse in 1809. The bridge from which it takes its name was built, for Trajan, 105. It consists of six arches, the two central ones with a span of 110 ft.; the whole length is 670, and the height 210 ft. This remarkable structure was partially blown up by the English in 1812, and was again destroyed during the civil war of 1836; and though it might be easily repaired, it is left in a state of ruin, the Spaniards being ferried over in a lumbering boat. Pop. about 4,000.

THE ORDER OF A. (formerly St. Julian), one of the religious orders of Spanish knighthood,



Order of Alcantara.

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was founded (1156) as a military fraternity for the defense of Estremadura against the Moors. In 1197, Pope Celestine III. raised it to the rank of a religious order of knighthood; bestowed great privileges on it, and charged it with the defense of the Christian faith, and the maintenance of eternal war with the infidel. Alfonso IX., having taken the town of Alcantara, ceded it in 1218 to the order of Calatrava (q.v.); but the knights of this order, unable to hold it with their other great possessions, yielded it to the knights of St. Julian, who transferred to it their seat, and henceforth were known by its name. At length the grand-mastership of the order was, by Pope Alexander VI., united to the Spanish crown in 1495. The order is still richly endowed. The knights, who follow the rule of St. Benedict, take now only the vows of obedience and poverty, having, since 1540, been absolved from that of celibacy. A special vow binds them to defend the dogma of the immaculate conception of the Virgin. At their nomination, they must prove four generations of nobility. For a time, the knights of A. acknowledged the superiority of the knights of Calatrava, but they were latterly absolved from it. Both the costume, however, and the cross are still the same, except the color, which is green. The crest of the order is a pear-tree.

ALCARAZ, *ál-ká-ráth'*: town of La Mancha, Spain, prov. of Albacete; 36 m. w.s.w. from Albacete, on the slope of an isolated hill, on the left bank of the Guadarmena, a feeder of the Guadalquivir. A ruined castle crowns the summit of the hill; and there are also the remains of a fine Roman aqueduct. Some of the streets are very steep. The inhabitants are partly employed in weaving and iron-working, partly in agriculture. Pop. 4,325.

ALCAUDETE, *ál-kow-dā tā* (anc. *Uditunum*): town of Andalusia, Spain, prov. of Jaen; 22 m. s.w. from Jaen; in a hollow, inclosed by three hills, on an affluent of the Guadalquivir; overlooked by the ruins of an ancient castle, and moderately well built. There are fine pictures in some of the churches. Oil and rope making, weaving, and agriculture are the chief employment of the inhabitants. Grain, silk, oxen, sheep, goats, pigs, mules, and asses are produced in the neighborhood. Pop. 8,242.

ALCAZAR DE SAN JUAN, *ál-ká'thēr dā sán hó-án'* (anc. *Alce*): town of New Castile, Spain, prov. of Ciudad Real; 49 m. n.e. from Ciudad Real, on the Madrid and Alicante railway. It is regularly built, and has two good squares. There are manufactories of soap, nitre, and gunpowder. Pop. 8,540.

ALCEDO, n. *ál-sē'dō* [L.]: the king-fisher (q.v.).

ALCHEMIL'LA: see **LADY'S MANTLE**.

ALCHEMY.

ALCHEMY, n. *āl-kě-mǐ* [OF. *alchemie*; F. *alchimie*, alchemy—from Ar. *al kīmīā*, the secret art: probably Ar. *al*, and late Gr. *chēmei'ā*, chemistry: Gr. *chūmā*, a melting or fusion; *chūmos*, juice, liquid]: the professed art of changing the other metals into gold; the art that professed to discover a universal remedy, the philosopher's stone, the elixir vitæ, and other impossible things. **ALCHEMIC**, a. *āl-kēm'ik*, or **ALCHEMICAL**, a. *āl-kēm'ī-kūl*, relating to alchemy. **ALCHEMIST**, n. *āl-kě-mist*, one who practices alchemy. **AL'CHEMIS'TICAL**, a. **AL'CHEMIS'TICALLY**, ad. *-lī*. *Note*.—The above are also spelt with *y* for *e*, as **ALCHYMY**, etc.

ALCHEMY: related to modern chemistry as astrology to astronomy, or legend to history. In the eye of the astrologer, a knowledge of the stars was valuable only as a means of foretelling, or even of influencing future events. In like manner, the genuine alchemist toiled with his crucibles and alembics, calcining, subliming, distilling, not with a view to discover the chemical properties of substances, as we understand them, but with two grand objects, illusory as those of the astrologer—to discover (1) *the secret of transmuting the baser metals into gold and silver*, and (2) *the means of indefinitely prolonging human life*.

Tradition points to Egypt as the birthplace of A. Hermes Trismegistus (q.v.) is represented as the father of it. The Greeks and Romans under the empire seem to have become acquainted with it from the Egyptians; there is no reason to believe that, in early times, either people had the name or the thing. The word *chēmeia* occurs in the lexicon of Suidas, 11th c., and is explained by him to be 'the conversion of silver and gold.' It is to the Arabs, from whom Europe got the name and the art, that we owe the prefixed article *al*. As if *chemia* had been a generic term embracing all common chemical operations, such as the decocting and compounding of ordinary drugs, the grand operation of transmutation was denominated *the chemia* (*al-chemy*)—the chemistry of chemistries. The Roman emperor Caligula is said to have instituted experiments for the producing of gold out of orpiment (sulphuret of arsenic); and in the time of Diocletian, the passion for this pursuit, conjoined with magical arts, had become so prevalent in the empire, that that emperor is said to have ordered all Egyptian works treating of the chemistry of gold and silver to be burnt. For at that time, multitudes of books on this art were appearing, written by Alexandrine monks and by hermits, but bearing famous names of antiquity, such as Democritus, Pythagoras, and Hermes.

At a later period the Arabs took up the art; and it is to them that European A. is directly traceable. The school of polypharmacy, as it has been called, flourished in Arabia during the caliphates of the Abbasides. The earliest work of this school now known is the *Summa Perfectionis*, or 'Summit of Perfection,' composed by Gebir (q.v.), 8th c.; it is consequently the oldest book on chemistry proper in the world. It contains so much of what sounds like jargon in our ears, that Dr. Johnson ascribes the origin of the word 'gibberish' to the name of the compiler. Yet when

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viewed in its true light, it is a wonderful performance. It is a kind of text book, or collection of all that was then known and believed. It appears that these Arabian poly-pharmacists had long been engaged in firing and boiling, dissolving and precipitating, subliming and coagulating chemical substances. They worked with gold and mercury, arsenic and sulphur, salts and acids; and had, in short, become familiar with a large range of what are now called chemicals. Gebir taught that there are three elemental chemicals—mercury, sulphur, and arsenic. These substances, especially the first two, seem to have fascinated the thoughts of the alchemists by their potent and penetrating qualities. They saw mercury dissolve gold, the most incorruptible of matters, as water dissolves sugar; and a stick of sulphur presented to hot iron penetrates it like a spirit, and makes it run down in a shower of solid drops, a new and remarkable substance, possessed of properties belonging neither to iron nor to sulphur. The Arabians held that the metals are compound bodies, and made up of mercury and sulphur in different proportions. With these excusable errors in theory, they were genuine practical chemists. They toiled at the art of making 'many medicines' (poly-pharmacy) out of the various mixtures and reactions of such chemicals as they knew. They had their pestles and mortars, their crucibles and furnaces, their alembics and aludels, their vessels for infusion, for decoction, for cohabitation, sublimation, fixation, lixiviation, filtration, coagulation, etc. Their scientific creed was transmutation, and their methods were mostly blind gropings; yet, in this way, they found out many a new body, and invented many a useful process.

From the Arabs, A. found its way through Spain into Europe, and speedily became entangled with the fantastic subtleties of the scholastic philosophy. In the middle ages, it was chiefly the monks that occupied themselves with A. Pope John XXII. took great delight in it, though it was afterwards forbidden by his successor. The earliest authentic works on European A. now extant are those of Roger Bacon (1214–84) and Albertus Magnus (1205–80). Roger Bacon (q.v.) appears rather the earlier of the two as a writer, and is really the greatest man in all the school. He was acquainted with gunpowder. Although he condemns magic, necromancy, charms, and all such things, he believes in the convertibility of the inferior metals into gold, but does not profess to have ever effected the conversion. He had more faith in the elixir of life than in gold-making. He followed Gebir in regarding potable gold—that is, gold dissolved in nitro-hydrochloric acid or *aqua regia*—as the elixir of life. Urging it on the attention of Pope Nicholas IV., he informs his Holiness of an old man who found some yellow liquor (the solution of gold is yellow) in a golden phial, when plowing one day in Sicily. Supposing it to be dew, he drank it off. He was thereupon transformed into a hale, robust, and highly accomplished youth. Bacon no doubt took many a dose of this golden water himself.—Albertus Magnus (q.v.) had a great mastery of the practical chemistry

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of his times; he was acquainted with alum, caustic alkali, and the purification of the royal metals by means of lead. In addition to the sulphur and-mercury theory of the metals, drawn from Gebir, he regarded the element, water, as still nearer the soul of nature than either of these bodies. He appears, indeed, to have thought it the primary matter, or the radical source of all things—an opinion held by Thales, the father of Greek speculation.—Thomas Aquinas (q.v.) also wrote on A., and was the first to employ the word *amalgam* (q.v.).—Raymond Lully (q.v.) is another great name in the annals of A. His writings are much more disfigured by unintelligible jargon than those of Bacon and Albertus Magnus. He was the first to introduce the use of chemical symbols (q.v.), his system consisting of a scheme of arbitrary hieroglyphics. He made much of the spirit of wine (the art of distilling spirits seems then recent), imposing on it the name of *aqua vita ardens*. In his enthusiasm, he pronounced it the very elixir of life. One of the most celebrated of the alchemists was Basil Valentine (q.v.), (b. 1394), who introduced antimony into medical use. He, with some previous alchemists, regarded salt, sulphur, and mercury as the three bodies contained in the metals. He inferred that the philosopher's-stone must be the same sort of combination—a compound, namely, of salt, sulphur, and mercury; so pure that its projection on the baser metals should be able to work them up into greater and greater purity, bringing them at last to the state of silver and gold. His practical knowledge was great; he knew how to precipitate iron from solution by potash, and many similar processes, so that he is ranked as the founder of analytical chemistry.

But more famous than all was Paracelsus (q.v.), in whom A. proper may be said to have culminated. He held, with Basil Valentine, that the elements of compound bodies were salt, sulphur, and mercury—representing respectively earth, air, and water, fire being already regarded as an indispensable—but these substances were in his system purely representative. All kinds of matter were reducible under one or other of these typical forms; everything was either a salt, a sulphur, or a mercury, or, like the metals, it was a 'mixt' or compound. There was one element, however, common to the four; a fifth essence or 'quintessence' of creation; an unknown and only true element, of which the four generic principles were nothing but derivative forms or embodiments: in other words, he inculcated the dogma, that there is only one real elementary matter—nobody knows what. This one prime element of things he appears to have considered the universal solvent of which the alchemists were in quest, and to express which he introduced the term *alcahest*—a word of unknown etymology, but supposed by some to be composed of the two German words *alle geist*, 'all spirit.' He seems to have had the notion that if this quintessence or fifth element could be got at, it would prove to be at once the philosopher's-stone, the universal medicine, and the irresistible solvent.

After Paracelsus, the alchemists of Europe became divided

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into two classes. The one class was composed of men of diligence and sense, who devoted themselves to the discovery of new compounds and re-actions—practical workers and observers of facts, and the legitimate ancestors of the positive chemists of the era of Lavoisier. The other class took up the visionary, fantastical side of the older A. and carried it to a degree of extravagance before unknown. Instead of useful work, they compiled mystical trash into books, and fathered them on Hermes, Aristotle, Albertus Magnus, Paracelsus, and other really great men. Their language is a farrago of mystical metaphors, full of 'red bridegrooms' and 'lily brides,' 'green dragons,' 'ruby lions,' 'royal baths,' 'waters of life.' The seven metals correspond with the seven planets, the seven cosmical angels, and the seven openings of the head—the eyes, the ears, the nostrils, and the mouth. Silver was Diana, gold was Apollo, iron was Mars, tin was Jupiter, lead was Saturn, and so on. They talk perpetually of the powder of attraction, which drew all men and women after the possessor of the alcahest, and the grand elixir, which was to confer immortal youth upon the student who should approve himself pure and brave enough to kiss and quaff the golden draught. There was the great mystery, the mother of the elements, the grandmother of the stars. There was the *philosopher's-stone*, and there was the *philosophical-stone*. The philosophical-stone was younger than the elements, yet at her virgin touch the grossest calx (ore) among them all would blush before her into perfect gold. The philosopher's stone, on the other hand, was the first-born of nature, and older than the king of metals. Those who had attained full insight into the arcana of the science were styled Wise; those who were only striving after the light were Philosophers; while the ordinary practicers of the art were called Adepts. It was these visionaries that formed themselves into Rosicrucian societies and other secret associations. It was also in connection with this mock-A., mixed with astrology and magic, that quackery and imposture so abounded, as is depicted by Scott in the character of Dousterswivel in the *Antiquary*. Designing knaves would, for instance, make up large nails, half of iron and half of gold, and lacquer them, so that they appeared common nails; and when their credulous and avaricious dupes saw them extract from what seemed plain iron an ingot of gold, they were ready to advance any sum that the knaves pretended to be necessary for pursuing the process on a large scale. It is from this degenerate and effete school that the prevailing notion of A. is derived—a notion unjust to the really meritorious alchemists who paved the way for genuine chemistry.

It is interesting to observe that the leading tenet in the alchemists' creed—the doctrine of the transmutability of other metals into gold and silver—a doctrine which it was at one time thought that modern chemistry had utterly exploded—receives not a little countenance from a variety of facts every day coming to light. The multitude of phenomena known to chemists under the name of *Allotropy* (q.v.) are leading speculative men more and more to the opinion that

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many substances hitherto considered chemically distinct are only the same substance under some different condition or arrangement of its component molecules, and that the number of really distinct elements may be very few indeed. See Kopp's *Geschichte der Chemie; Alchemy and the Alchemists*, by Dr. Samuel Brown, in Chambers's *Papers for the People* (No. 66); and the article **ALCHEMY** in the 9th ed. (1875) *Encyclopælia Britannica*.

ALCIBIADES, *äl-si-bi'-ä-dēz*: B.C. 450-404; b. Athens; son of Clinias and Dinomache. He lost his father in the battle of Chæronæa; and was educated in the house of Pericles, his uncle. In youth he gave promise of his future greatness, excelling both in mental and in bodily exercises. His handsome person, his distinguished parentage, and the high position of Pericles, procured him a multitude of friends and admirers. Socrates was one of the former, and gained considerable influence over him; but was unable to restrain his love of luxury and dissipation, which found ample means of gratification in the wealth that accrued to him by his union with Hipparete, the daughter of Hipponicus. His public displays, especially at the Olympic games, were incredibly expensive. He bore arms for the first time in the expedition against Potidæa, B.C. 432, where he was wounded, and where his life was saved by Socrates—a debt which he liquidated eight years after at the battle of Delium, by saving, in his turn, the life of the philosopher; but he seems to have taken no part in political matters till after the death of the demagogue Cleon, when Nicias brought about a treaty of peace for fifty years between the Athenians and Lacedæmonians. A., jealous of the esteem in which Nicias was held, persuaded the Athenians to ally themselves with the people of Argos, Elis, and Mantinea, and did all in his power to stir up afresh their old antipathy to Sparta. It was at his suggestion that they engaged in the celebrated enterprise against Sicily, to the command of which he was elected, with Nicias and Lamachus. But while preparations were being made, it happened during one night that all the statues of Mercury in Athens were mutilated. The enemies of A. threw the blame of this mischief upon him, but postponed the impeachment till he had set sail, when they stirred up the people against him to such a degree, that he was recalled, in order to stand his trial. On his way home, he landed at Thurii, fled, and betook himself to Sparta, where, by conforming to the strict manners of the people, he soon became a favorite. He induced the Lacedæmonians to send assistance to the Syracusans, persuaded them to form an alliance with the king of Persia, and after the unfortunate issue of the Athenian expedition in Sicily, to support the people of Chios in their endeavors to throw off the yoke of Athens. He went thither himself, and raised all Ionia in revolt against that city. But Agis and the other leading men in Sparta, jealous of the success of A., ordered their generals in Asia to have him assassinated. A. discovered this plan, and fled to Tissaphernes, a Persian satrap, who had orders to act in concert with the Lacedæmonians. He now resumed his old manners, adopted the luxurious

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habits of Asia, and made himself indispensable to Tissaphernes. He represented to the latter that it was contrary to the interests of Persia entirely to disable the Athenians. He then sent word to the commanders of the Athenian forces at Samos that he would procure for them the friendship of the satrap if they would control the extravagance of the people, and commit the government to an oligarchy. This offer was accepted, and Pisander was sent to Athens, where he got the supreme power vested in a council of 400 persons. When it appeared, however, that this council had no intention of recalling A., the army at Samos chose him as their commander, desiring him to lead them on instantly to Athens, and overthrow the tyrants. But A. did not wish to return to his native country till he had rendered it some service, and he accordingly attacked and defeated the Lacedæmonians both by sea and land. Tissaphernes now ordered him to be arrested at Sardis on his return, the satrap not wishing the king to imagine that he had been accessory to his doings. But A. found means to escape; placed himself again at the head of the army; beat the Lacedæmonians and Persians at Cyzicus; took Cyzicus, Chalcedon, and Byzantium; restored to the Athenians the dominion of the sea; and then returned to his country, B.C. 407, to which he had been formally invited. He was received with general enthusiasm, as the Athenians attributed to his banishment all the misfortunes that had befallen them.

The triumph of A., however, did not last. He was again sent to Asia with 100 ships; but not being supplied with money for the soldiers' pay, he was obliged to seek assistance at Caria, where he transferred the command in the mean time to Antiochus, who, being lured into an ambuscade by Lysander, lost his life and part of the ships. The enemies of A. took advantage of this to accuse him and appoint another commander. A. went to Thrace, where he lived in voluntary exile in Pactyæ, one of the castles which he had built out of his earlier spoils. But being threatened here with the power of Lacedæmonia, he removed to Bithynia, with the intention of repairing to Artaxerxes, to gain him over to the interests of his country. At the request of the Thirty Tyrants of Athens, and with the concurrence of the Spartans, Pharnabazus, a satrap of Artaxerxes, received orders to put A. to death. He was living at this time in a castle in Phrygia; Pharnabazus ordered it to be set on fire during the night, and as his victim was endeavoring to escape from the flames, he was pierced with a volley of arrows. A. was singularly endowed by nature, being possessed of the most fascinating eloquence (although he could not articulate the letter *r*, and stuttered in his speech), and having in a rare degree the talent to win and to govern men. Yet in all his transactions, he allowed himself to be directed by external circumstances, without fixed principles of conduct. On the other hand, he possessed that boldness which arises from conscious superiority, and shrunk from no difficulty, because he was never doubtful concerning the means by which an end might be attained. His life has been written by Plutarch and Cornelius Nepos.

ALCIRA—ALCOHOL.

ALCIRA, *ál-thě'rá* (anc. *Sæbaticula*): town of Spain, province of Valencia, 20 m. s. by w. from Valencia, on an island in the river Xucar, the two branches of which are here crossed by stone bridges. It is surrounded by old walls, with strong towers. The principal streets are wide, but the town is ill built. The inhabitants are chiefly employed in the manufacture of earthenware, the production of silk, and agriculture. The surrounding country is much intersected by canals, exhibiting an admirable specimen of the system of irrigation introduced by the Moors. Pop. 16,400.

ALCMAN, *ál'k'man*: ancient lyric poet; b. at Sardis, cap. of Lydia, Asia Minor, but lived first as a slave, and afterwards as a freeman in Sparta. He is the earliest erotic poet, and is said to have introduced some new metrical forms called *Alcmanica Metra*. He composed in the Doric dialect a poem on the Dioscuri, Parthenia, or songs sung by choruses of virgins, bridal-hymns, verses in praise of love and wine, etc. We have only a few fragments of A., and these do not justify the high opinion entertained of his merits by the ancients, though some of them exhibit considerable beauty. A. died of a loathsome disease (*morbus pedicularis*).

ALCO, *ál'kō*: a variety of dog, domesticated in Mexico and Peru before the discovery of America by Europeans, also found in a wild state in these countries. But whether it is originally a native of them, or has escaped from domestication, is uncertain, nor is the variety well known to naturalists. It is described as having a very small head and pendulous ears; the latter being in dogs one of the ordinary results of domestication. Humboldt supposed it to be allied to the shepherd's dog. It has been attempted to elevate it into a species under the name of *Canis A*. It is not improbable that the name A. was given to more varieties than one.

ALCOHOL, n. *ál'kō-hōl* [OF. *alcohol*; F. *alcool*—from Ar. *al kohol*, or *alqohl*, the impalpable powder of antimony with which the orientals stain their eyelids, a pure extract—*lī'*, fine powder]: spirits of wine; distilled spirits highly rectified; the intoxicating principle in all spirituous or fermented liquors; in *chem.*, any body consisting of an organic radical united with one or more atoms of hydroxyl, comprising such bodies as naphtha, fusel oil, glycerine, etc. **ALCOHOLIC**, a. *ál'kō-hōl'ik*, pertaining to alcohol. **ALCOHOLATE**, n. *ál'kō-hōl'āt*, a salt containing alcohol. **ALCOHOLIZE**, v. *ál'kō-hō-līz'* to convert into alcohol. **ALCOHOLIZING**, imp. **ALCOHOLIZED**, pp. *līz'd*. **ALCOHOLIZATION**, n. *-hōl'ī zā shūn*, the art of rectifying spirits of wine till it is absolutely pure. **ALCOHOLMETER**, n. *ál'kō-hōl'mě-tēr* [Ar. *al kohol*: Gr. *metron*, a measure]: an instrument for ascertaining the strength of spirits. **ALCOHOLISM**, n. *ál'kō-hōl-izm*, the diseased condition produced by over-indulgence in the use of alcoholic liquids,

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ALCOHOL (ordinary or *ethyl A.*): a limpid, colorless liquid of a hot, pungent taste, and having a slight but agreeable smell. It is the characteristic ingredient of fermented drinks, and gives them their intoxicating quality. If we look at the extraordinary consumption of these liquors for various purposes, it is seen to be one of the most important substances produced by art.

There is only one source of A.—namely, the fermentation of sugar or other saccharine matter. Sugar is the produce of the vegetable world. Some plants contain free sugar, and still more contain starch, which can be converted into sugar. The best vegetable substances, then, for yielding A. are those that contain the greatest abundance of sugar or of starch. See DIASTASE: FERMENTATION: DISTILLATION.

Owing to the attraction of A. for water it is impossible to procure pure A. by distillation alone. Common spirits such as brandy, whisky, etc., contain 50 or 52 per cent. of A.; in other words, they are about half A., half water. *Proof-spirit*, which is the standard by means of which all mixtures of A. and water are judged, contains 57·27 per cent. by volume, and 49·50 per cent. by weight of A. The specific gravity of proof-spirit is 918·6; and when a spirit is called *above proof*, it denotes that it contains an excess of A.; thus, *spirit of wine*, or rectified spirit, with specific gravity 838, is 54 to 58 over-proof, and requires 54 to 58 per cent. of water to be added to it to bring the strength down to that of proof-spirit; while the term *under-proof* has reference to a less strong spirit than the standard. See ARÆOMETER. The most primitive method of learning the strength of A. was to drench gunpowder with it, set fire to the spirit, and if it inflamed the gunpowder as it died out, then the A. stood the test or proof, and was called proof-spirit. The highest concentration possible by distillation gives 90 per cent. of A., still leaving 10 per cent. of water. In order to remove this, fused chloride of calcium, quicklime, or fused carbonate of potash, is added to the alcoholic liquid, the whole allowed to stand for 12 hours, and then the spirit may be distilled off quite free from water. Spirit of wine may also be deprived of its remaining water by suspending it in a bladder in a warm place; the bladder allows much of the water to pass through and evaporate, but little of the A. The latter method is called Soemmering's process, and depends on the different degrees of rapidity with which the bladder admits of water and A. passing through it. Thus, introduce into one bladder eight ounces of water, and into a second eight ounces of A., and allow both bladders to be similarly exposed on a sand-bath till all the water has evaporated through the pores of the membrane, which will be accomplished in about four days, and it will then be observed, that while eight ounces water have made their exit from the bladder, only one ounce of A. has thus evaporated, and seven ounces still remain in the bladder. This experiment explains why smugglers, a few generations ago, could supply a whisky which was stronger, and hence esteemed preferable, as they carried the whisky in bladders around their persons, and the water escaping

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therefrom in much greater proportion than the A., a stronger spirit was left.

A. is used medicinally, both internally and externally. As a *stomachic stimulant* A. is used in sea-sickness and indigestion. As a *stimulant and restorative* it is employed with advantage in the later stages of fever. It is also employed internally as a *powerful excitant* to prevent fainting during operations, and to assist in restoration in cases of suspended animation, and in cases of diarrhea, unaccompanied by inflammation. Externally, A. is applied to stop hemorrhage, to harden the cuticle over tender parts, as the nipples of females for some time before delivery, and to feet which have been blistered from long walking or tight-fitting shoes.

Absolute or anhydrous A. has a specific gravity of 793 at the temperature of 60°. It boils at 173°, and has not been frozen by any cold hitherto produced. Reduced to a temperature of -130°, A. becomes of an oily and greasy consistence; at -146° it assumes the aspect of melted wax; and at -166° becomes still thicker, but does not congeal at the lowest attainable temperature. This property of non-freezing at any degree of cold to which the earth is subjected has led to the employment of A. colored red by cochineal in the thermometers sent out to the Arctic regions. A. acts as a poison by its abstraction of the water from the parts which it touches. It is highly inflammable, its combustion yielding only carbonic acid and water. When mixed with water, heat is evolved, and a condensation takes place. The formula of A. is C_2H_6O . In 100 pounds, therefore, of A., about 53 are carbon, 13 hydrogen, and 34 oxygen. Besides the A. used in wine, beer, and spirits, it is much employed in pharmacy and in the arts. It is a powerful solvent for resins and oils; and hence is employed in the preparation of varnishes. In Germany, a cheap spirit made from potatoes is much used as fuel in cooking on a small scale. See ALCOHOLS: METHYLATED SPIRIT. For the use and abuse of alcoholic drinks: see FOOD AND DRINK: INTOXICATION: TOTAL ABSTINENCE.

ALCOHOL, PHYSIOLOGICAL AND POISONOUS ACTION OF. Alcohol, in a concentrated form, exerts a local irritant action on the membranes and tissues of the animal body. According to various circumstances, as, for example, its greater or less dilution, the quantity in which it is administered, the emptiness or fulness of the stomach, and the nature of the animal on which the experiment is made, alcohol may either act as a gentle stimulus which assists the digestive process, or it may excite such a degree of irritation as may lead to the disorganization of the mucous membrane. It is well known that dilute alcohol, in contact with animal matter, at a temperature of from 60° to 90° undergoes acetic fermentation, and it was maintained by Leuret and Lassaigne that a similar change takes place in the stomach. It appears, however, that only a small part of the alcohol undergoes this change; and it is the small part thus changed which produces the penetrating and disagreeable acidity which characterizes the eructations and vomited matters of drunkards. Alcohol is, however, for the most part, rapidly absorbed

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In an unchanged state, either in the form of liquid or vapor; and this absorption may take place through the cellular (or connective) tissue, the serous cavities, the lungs, or the digestive canal. This is shown by the experiments of Orfila, who fatally intoxicated dogs by injecting alcohol into the subcutaneous cellular tissue, or by making them breathe an atmosphere charged with alcoholic vapor; and by Rayer, who injected about half an ounce of proof-spirit into the peritoneum of rabbits, which almost immediately became comatose, and died in a few hours. It is, however, only with absorption from the intestinal canal that we have to deal, in relation to man. Almost the whole of this absorption is effected in the stomach, and it is only when alcohol is taken in great excess, or is mixed with a good deal of sugar, that any absorption beyond the stomach occurs. The rapidity of the absorption varies according to circumstances. The absorption is most rapid when the stomach is empty and the drinker is fatigued; while the action is delayed by a full stomach, and especially by the presence of acids, tannin, or the mucilaginous and saccharine ingredients of many wines. Fatty matters have a similar action, and hence it is that (as we learn from Dr. Perrin's elaborate article on 'The Physiology of Alcohol,' in the *Dictionnaire Encyclopédique des Sciences Médicales*, vol. ii. p. 577, 1865) 'we must account for the English habit of taking a very fat soup, or even a glass of oil, before proceeding *aux libations*.' For the mode of action of alcohol on the system, and the various phenomena of drunkenness, see INTOXICATION. Previously to 1860, the actual presence of alcohol in the blood had been attempted to be proved by many chemists, but no satisfactory evidence upon this point had been adduced, and its presence had also been sought for in the expired air and in the secretions, but the results were equally doubtful; and Liebig's view, that alcohol was oxidized in the blood, and after passing through various stages of oxidation, was finally converted into, and eliminated from, the system as carbonic acid and water, was almost generally accepted. In that year, however, an elaborate work, abounding in well devised experiments, and entitled, *Du Rôle de l'Alcool et des Anesthésiques dans l'Organisme*, was published by three well-known physiological inquirers, MM. Lallemand, Perrin, and Duroy, and received a prize, with high commendation, from the Academy of Sciences. In this work, it seems proved beyond doubt that 'alcohol stays for a time in the blood, that it exercises a direct and primary action on the nervous centres, whose functions it modifies, perverts, or abolishes, according to the dose; that neither in the blood nor in the expired air are any traces to be found of its transformation or destruction; that it accumulates in the nervous centres, and in the liver; and that it is finally discharged from the system by the ordinary channels of elimination.'—Perrin, *op. cit.*, p. 580. So far from carbonic acid being one of its final products, it is now ascertained that alcohol causes a diminished exhalation of that gas. The alcohol, when it has entered the blood, is diffused over the whole organism, remains during, ap-

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parently, different periods in different organs, and almost immediately begins to escape; and if as much wine or spirit is taken as contains 80 grammes, or rather more than 2½ ounces of alcohol, the urine passed some hours afterwards yields, by distillation, an amount of alcohol capable of burning; and the elimination by this channel continues for 16 hours or more. The elimination by the lungs continues for about eight hours. The authors believe that in man the chief excreting channel is the skin, but they have no data to show how long this elimination is continued. They further show that, when a quantity of *vin ordinaire* equivalent to half an ounce of alcohol has been taken by a healthy man, the presence of alcohol may be readily detected in the blood, the expired air, the urine, and the cutaneous exhalation in the course of half an hour after the wine has been taken. In animals destroyed when intoxicated, the portions of the brain and of the liver are found to yield, weight for weight, considerably more alcohol than the blood. The fact of the retention and accumulation of alcohol in the nervous centres and liver, tends to throw much light on the special diseases of drunkards.

The action of any kind of alcoholic drink in moderate doses is that of a somewhat rapid stimulant. The bodily and mental powers are for a time excited beyond ordinary strength, after which there is corresponding depression. Although the alcohol introduced into the system cannot act as a true food (for in that case it would not pass through the system unchanged), it indirectly takes the place of food, by diminishing the wear and tear of the system, and thus rendering less food sufficient; a fact proved by chemical experiments, showing that less carbonic acid and urea (which are the ultimate products of the carbonaceous and nitrogenous tissues) are given off when alcohol is administered in moderation, than when it is totally withheld.

The influence of an excessive dose of alcohol has been demonstrated by various series of experiments on animals, and unfortunately in man. If a poisonous dose of alcohol be given to an animal (a dog, for example), its action on the nervous system is the first point that is noticed. The dog ceases to exhibit the ordinary control over its muscular movements, which seem to be no longer under the influence of the will. It walks with uncertain and doubtful steps, till the hind legs lose their power, the fore-legs still preserving some activity. The general sensibility becomes more or less abolished, and the animal can no longer see or feel. Soon afterwards the respiration fails; and finally, the circulation is arrested, and life ceases with the last beat of the heart.

As cases are of frequent occurrence in which it is almost impossible for non-professional persons (the police, for example) to distinguish between extreme drunkenness and certain other morbid conditions, as apoplexy, concussion of the brain, and opium-poisoning, a few rules on this subject may be practically useful. In concussion and in very extreme intoxication, there is profound coma or sleepiness; but in the latter case, the odor of the breath removes all difficulty of

ALCOHOLOMETRY.

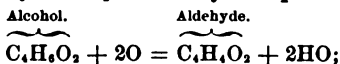
diagnosis. The most difficult cases are those in which the symptoms of concussion or apoplexy are associated with an alcoholic odor of the breath; in such cases, the head should be most carefully examined for marks of violence, and every effort should be made to obtain a history of the case from those who had previously seen the patient. In poisoning by opium or laudanum, the peculiar smell of the drug may generally be detected in the breath (a test which, however, fails if morphia has been taken). In poisoning by opium, the face is pale, and the pupils of the eyes are contracted; while in drunkenness, the face is flushed, and the pupils are generally dilated. Another difference (to which Dr. A. S. Taylor calls attention) is this—that while perfect remissions are rare in poisoning by opium, in poisoning with alcohol the patient often recovers his senses, and subsequently dies. In either kind of poison, the stomach-pump should be used, and the ejected contents of the stomach may facilitate the diagnosis. A sulphate of zinc emetic should be prescribed, if there is no stomach-pump at hand; and after the stomach has been well cleared out, coffee and other strong stimulants should be given.

ALCOHOLOMETRY, *äl'kō-hōl-ōm'ēt-rī*: the process of estimating the percentage of absolute alcohol in a sample of spirits. See **AREOMETER**.

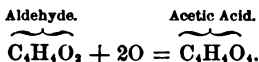
ALCOHOLS.

ALCOHOLS: in Chemistry. During the last few years, there has been much enlargement in the knowledge of the properties of ordinary alcohol and of the general class of bodies to which the term *Alcohols* is applied, in consequence of their resemblance, in certain chemical reactions, to ordinary alcohol. The A. all are compounds of carbon, hydrogen, and oxygen, and are perfectly neutral to test papers. They are characterized chiefly by yielding, on treatment with acids, neutral bodies called ethers, the formation of water being a part of the reaction. According to the theory of chemical types (see TYPES, CHEMICAL), the alcohols are divided into monatomic and polyatomic. See POLYATOMIC ALCOHOLS. According to their behavior on oxidation, they are further divided into primary, secondary, and tertiary.

Let us now consider the action of oxygen on ordinary alcohol. In a nearly anhydrous state, alcohol has little tendency to oxidation, but when freely diluted, and exposed to the air, it rapidly becomes oxidized into acetic acid. This conversion is, however, not direct, an intermediate compound, termed Aldehyde (q. v.), being first formed, which is rapidly oxidized into acetic acid. The oxidation of alcohol into aldehyde is represented by the equation,



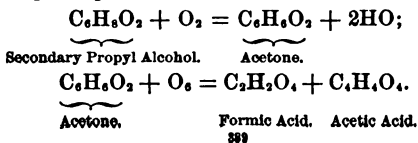
and the further oxidation of aldehyde into acetic acid is represented by



In the first reaction, alcohol loses two atoms of hydrogen, water being formed; in the second, aldehyde takes up two atoms of oxygen.

Every alcohol which like ordinary alcohol yields on oxidation an aldehyde, and on further oxidation an acid having the same number of carbon atoms as the alcohol itself, is termed a primary alcohol. To take another example, primary propyl alcohol ($\text{C}_3\text{H}_7\text{O}_2$) is oxidized first into propyl aldehyde ($\text{C}_3\text{H}_6\text{O}_2$), and then into propionic acid ($\text{C}_3\text{H}_6\text{O}_4$). Primary alcohols are subdivided into normal and iso-alcohols.

Secondary alcohols on oxidation lose two atoms of hydrogen, and are converted into bodies known as acetones or ketones, which differ from aldehydes inasmuch as they are not converted on oxidation into acids having the same number of carbon atoms, but are split up into atoms having a smaller number of carbon atoms. Thus secondary propyl alcohol is oxidized into acetone, and on further oxidation, acetone splits up into formic and acetic acids,



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It will be observed that propyl alcohol and secondary propyl alcohol, aldehyde, and acetone, are respectively isomeric. See ISOMERISM.

Tertiary alcohols on oxidation give neither aldehydes nor ketones, but split up into acids having a smaller number of carbon atoms. Thus tertiary butyl alcohol ($C_4H_{10}O_2$), which is isomeric, with primary and with secondary butyl alcohol, splits up on oxidation into acetic and formic acids. Only a comparatively small number of secondary and tertiary alcohols are at present known, and their properties and reactions have not been so thoroughly studied as those of the much more numerous class of primary alcohols. Theoretical considerations, however, lead to the belief that their number will be largely increased.

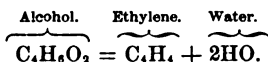
Ordinary or ethyl alcohol is monatomic—that is, it may be regarded as being derived from the type $\begin{matrix} H \\ H \end{matrix} \left\{ O_2 \right.$, by the substitution of its radical ethyl, C_2H_5 , for one atom of hydrogen. This is expressed by the formula $\begin{matrix} C_2H_5 \\ H \end{matrix} \left\{ O_2 \right.$.

The *monatomic alcohols* are more abundant than all the polyatomic alcohols together. There are several series of them, of which the most important are alcohols whose radical is of the form $C_2^nH_{2^n+1}$ (as $C_2H_5, C_4H_9, C_6H_{13}$), and which are represented by the formula $\begin{matrix} C_2^nH_{2^n+1} \\ H \end{matrix} \left\{ O_2 \right.$. They are intimately related to the fatty acids, whose general formula is $C_2^nH_{2^n}O_2$, which may be formed from the alcohol by oxidation, O_2 being substituted for H_2 . Thus alcohol, represented generally by $\begin{matrix} C_2^nH_{2^n+1} \\ H \end{matrix} \left\{ O_2 \right.$, yields the fatty acid represented by $C_2^nH_{2^n}O_2$; for example, methyl-alcohol, $C_2H_5O_2$, yields formic acid, $C_2H_4O_2$; ethyl-alcohol, $C_4H_9O_2$, yields acetic acid, $C_4H_8O_2$; and so on. The three highest alcohols of this set, cetyllic, cerotyllic, and melissylic alcohols, have the formulæ $C_{32}H_{65}O_2$, $C_{36}H_{73}O_2$, and $C_{40}H_{81}O_2$, and are solid, waxy, or fatty matters. There is one alcohol whose radical is $C_{20}H_{41}$, and whose formula is $C_{20}H_{41}O_2$ —viz., the solid substance known as Borneo Camphor (see RESINS); and in cholesterin (an ingredient of the bile), whose formula is $C_{27}H_{55}O_2$, the radical is $C_{27}H_{53}$. *Diatomic alcohols* belong to the secondary water type, $\begin{matrix} H_2 \\ H_2 \end{matrix} \left\{ O_4 \right.$. Thus the most important diatomic alcohol, glycol, $C_2H_6O_4$, is represented, according to the theory of types, by the formula $\begin{matrix} (C_2H_4)'' \\ H_2 \end{matrix} \left\{ O_4 \right.$, its radical, C_2H_4 , being marked with two dashes, to indicate that it replaces two atoms of hydrogen. In the *triatomic alcohols*, we take $\begin{matrix} H_3 \\ H_3 \end{matrix} \left\{ O_6 \right.$, or the tertiary type of water, and replace half the hydrogen—viz., three atoms, by one atom of an organic radical, which we consequently mark with three dashes. The well-known substance glycerine, $C_3H_8O_6$, is the only example of the triatomic alcohols. Its radical is C_3H_5 ; and as this replaces three atoms of hydrogen, its typical formula is $\begin{matrix} (C_3H_5)''' \\ H_3 \end{matrix} \left\{ O_6 \right.$. Erythrite, a substance obtained from the litmus lichen, is a

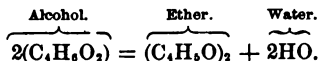
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tetratomic alcohol; one atom of its radical, C_4H_9 , replaces four atoms of hydrogen, and its typical formula is written $(C_4H_9)^{vi} \left\{ \begin{smallmatrix} O_8 \\ H_4 \end{smallmatrix} \right.$; while Mannite (the chief ingredient of the well-known substance Manna, described in the article SUGAR) is a hexatomic alcohol, in which one atom of the radical, $C_{12}H_{25}$, replaces six atoms of hydrogen, its typical formula being $(C_{12}H_{25})^{vi} \left\{ \begin{smallmatrix} O_{12} \\ H_6 \end{smallmatrix} \right.$, while its ordinary formula is $C_{12}H_{14}O_{12}$.

Berthelot has shown that several substances not usually classed as alcohols, nevertheless possess an essential character of these bodies—viz., that of uniting with acids to form neutral compounds, water being found during the reaction. When heated with alkalis, these bodies reproduce the substances from which they were formed. These substances are chiefly of a saccharine nature. As examples, we may mention Pinite, a sugar from the *Pinus lambertina*, a Californian tree; Quercite, the sugar of acorns; Phycite, a sugar obtained from certain lichens; and Meconin, an acrid crystallizable substance obtained from opium. A few supplementary remarks are added concerning ordinary alcohol. Chlorine and alcohol react singularly on each other—the final products being hydrochloric acid and a very remarkable colorless oily fluid of a peculiar penetrating and irritating odor, called chloral, which is represented by the formula, $C_2Cl_2HO_2$. Dilute alcohol distilled with chloride of lime (bleaching powder), yields chloroform; and this is the most economical process for obtaining this invaluable compound. Heated with an excess of sulphuric acid, alcohol loses all its oxygen in the form of water, and is converted into ethylene, the result being shown by the equation,



A less complete dehydration, under the action of sulphuric acid, converts alcohol into ether. The process is a complicated one, but the final result is expressed by the equation,



The best tests for discovering the presence of alcohol are—
 1. Its hot pungent taste, its odor, and its great volatility.
 2. Absorbed in asbestos, it burns with a pale blue flame, which deposits no carbon on white porcelain; and when burned in the mouth of an inverted test-tube, containing a few drops of solution of baryta, it produces a well marked deposit of carbonate of baryta—carbonic acid and water being the products of its combustion.
 3. It dissolves camphor.
 4. When boiled with sulphuric acid and a few drops of a saturated solution of bichromate of potash, it reduces this salt to green chromic sulphate. The chromium test, originally discovered by Dr. Thompson in 1846, is that on which the French physiologists Lallemand, Perrin, and Du-roy relied in their investigations regarding the presence of

ALCORA—ALCOY.

alcohol in the blood, urine, expired air, etc. See **ALCOHOL** (PHYSIOLOGICAL ACTION OF).

Alcohol is of a double use to the chemist, inasmuch as it furnishes a cleanly and valuable fuel when used in the spirit-lamp, and possesses remarkable solvent powers without in general exerting chemical action on the dissolved substances. It dissolves many of the gases more freely than water, as, for example, nitrous oxide, carbonic acid, phosphuretted hydrogen, cyanogen, and the hydro-carbons, as, for instance, ethylene. Among the mineral substances which it dissolves may be mentioned iodine, bromine, boracic acid, the hydrates of potash and soda, the chlorides of calcium, strontium, magnesium, zinc, platinum, and gold, the perchloride of iron, corrosive sublimate, the nitrates of lime, magnesia, etc., while among organic matters, it dissolves many organic acids, bases, and neutral bodies, the resins, the soaps, and the fats, which latter, however, dissolve more freely in ether than in alcohol. The alcoholic solutions of substances used in medicine are called *Tinctures*.

ALCORA, *ál-kó'rá*: town of Valencia, Spain, province of Castellon, 40 m. n.n.e. of Valencia. Corn, grapes, silk, and hemp are among the principal productions of the neighborhood, and fruit is exported. Pop. (1877) 3,633.

ALCORAN, n. *ál-kō'rán'* [Ar. *alkorán*]: the book containing the Mohammedan law, precepts, and doctrines—now more commonly spelt *Koran*. **AL'CORAN'IC**, a. *-ík*, of or pertaining to the Alcoran, or its doctrines and precepts. **AL'CORAN'IST**, n. *-íst*, an adherent to the strict letter of the Koran. See **KORAN**.

ALCOVE, n. *ál-kōv'* [F. *alcove*—from It. *alcovo*, a recess: Sp. *alcoba*, a part of a room railed off to hold a bed—from Ar. *al-qobbah*, a vaulted space covered as a tent]: architectural term, denoting a recess in a chamber where one may recline, or where a bed or side-board may be placed. An A. is either hung with curtains or closed with doors during the day. It was known to the ancients, and at one time very common in France, when the immoderate size of the apartments rendered it absolutely necessary as a preventive against the cold during sleep. It is no longer common or fashionable, eminent physicians having declared its closeness injurious and prejudicial to health. A. is applied also to the bays or open recesses for book-shelves in a library hall: also a shady recess in a garden.

ALCOY, *ál-kō'è*: town of Spain. prov. of Alicante, a portion of the former kingdom of Valencia. It is 'built in a funnel of the hills, on a tongue of land hemmed in by two streams, with bridges and arched viaducts.' The houses hang picturesquely over the terraced gardens and ravines. The walls of A. are of clay, and suffered considerable damage during the last war; but the town contains some new edifices, and has numerous manufactories. 'Here is made the *papel de hilo*, the book *Librito de fumar*, which forms the entire demiduodecimo library of nine tenths of Spaniards. and with which they make their *papelitos*, or little paper-cigars; 200,000 reams are annually made, of which 10,000 are used for writing, 10,000 for packing, and 180,000 for the

ALCUDIA—ALCUIN.

paper-cigars. A. is also famous for its sugar-plums. It has a consistory, town-hall, poor asylum, public granary, etc. Pop. (1877) 32,897.

ALCUDIA, *ál-kó-de-á*: **MANUEL DE GODOY**, Duke of, known as the Prince of Peace: 1767–1851: b. Badajos, Spain. Poor, but handsome and musical, at the age of 20 he entered the king's body-guard at Madrid, and soon became a favorite of the weak Charles IV., as well as of his queen. Honors and emoluments flowed in rapidly. In 1801, he led the Spanish army against the Portuguese, and signed the treaty of Badajos. In 1804, he was made generalissimo of the Spanish forces on sea and land, and invested with unlimited power. The alliance of Spain with France, and the war with England which ensued, in spite of the sums paid by Spain to secure neutrality, the defeat of Trafalgar, and consequent check to commerce—all tended to exasperate the public mind, and a court-party was formed against him, with the Prince of Asturias at its head. A. now resolved to shake off the French alliance, and to treat secretly with the Lisbon court. But, however cautiously taken, his warlike measures reached the ears of Napoleon, and determined him to carry out his project of dethroning the Bourbons. Meanwhile, the people had been further exasperated against the favorite by his unprincipled accusations against the Prince of Asturias; and when, in 1808, Charles abdicated in favor of his son, the duke's life was saved only by the promise of his trial. This trial, however, never took place. Napoleon, who knew his influence over the minds of their Spanish majesties, had him liberated, and brought to Bayonne, where he instigated all measures taken by the ex-king and queen, retaining their favor till their death. After his fall, he lived chiefly in France. In 1808, his income had been estimated at 5,000,000 piastres. After the revolution of 1830, he was subsisting in Paris upon a small pension bestowed by Louis-Philippe. In 1847, his return to Spain was permitted, and his titles, together with great part of his wealth, restored. He died at Paris.

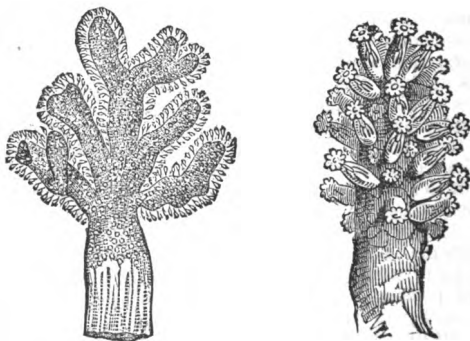
ALCUIN, *ál'kwín*, or **FLACCUS ALBINUS**: abt. 735–804; b. York, Eng.: the most distinguished scholar of the 8th c., the confidant and adviser of Charlemagne. He was educated under the care of Abp. Egbert, and his relative, Aelbert, and succeeded the latter as master of the School of York. Charlemagne became acquainted with him at Parma, as he was returning from Rome, whither he had gone to bring home the *pallium* for a friend; and in the year 782, this monarch invited him to his court, and availed himself of his assistance in his endeavors to civilize his subjects. A. became the preceptor of Charlemagne himself, whom he instructed in the various sciences. To render his instructions more available, Charlemagne established at his court a school called *Schola Palatina*, the superintendence of which, as well as of several monasteries, was committed to him. In the learned society of the court, A. went by the name of Flaccus Albinus. Most of the schools in France were either founded or improved by him. Among others, he founded the school in the Abbey of St. Martin, in Toura

ALCYONITE—ALCYONIUM.

(796), taking as his model the School of York; and in this school he himself taught after his retirement from court (801). While living at Tours, he frequently corresponded with Charlemagne. At his death he left, besides numerous theological writings, a number of elementary works on philosophy, mathematics, rhetoric, and philology; also poems, and a great number of letters. His letters, while they betray the uncultivated character of the age generally, shew A. to have been the most accomplished man of his time. He understood Latin, Greek, and Hebrew. Good editions of his works appeared, 1777 and 1873. See the life of A. by Lorenz (1829); Monnier's *A. et Charlemagne* (1864); and Mullinger's *Schools of Charles the Great* (1877).

ALCYONITE, n. *āl-sī'ō-nīt* [L. *Alcyonē*, a daughter of Æolus]: a term applied to the spongiform fossils common in the chalk-formation. **ALCYONARIA**, n. plu. *āl-sī'ō-nā'rī-ū*, a division of the Cœlenterata, comprising the sea-pens, red-corals, fan-corals, etc.

ALCYONIUM, *āl-sī-ō'ni-ūm*: a genus of Cœlenterata, the type of an order called *Alcyonaria*, belonging to the class



Alcyonium digitatum.

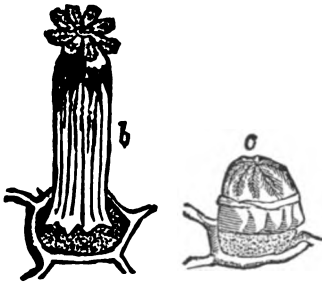
1. Reduced general figure.
2. A portion showing the polypes protruded, and with extended tentacula.

Actinozoa (see ZOOLOGY), and consisting of a polype-mass with starlike pores and protrusive polypes. *A. digitatum* is extremely common on the British shores, on stones, old shells, etc., in deep water. It sometimes appears as a mere crust, about the eighth of an inch in thickness, but commonly rises up in rounded cones, and often assumes forms which have procured for it the popular name of *Dead Man's Fingers*, and other similar appellations. The polype-mass is gelatinous within, and covered with a sort of leathery skin, the mass being traversed by a multitude of minute canals, terminating on the outer surface in starlike figures, which, if the whole be placed in sea-water, are seen to project considerably from the surface, and appear as polypes with eight tentacula or feelers; so that what seems to be a disgusting fleshy mass in the fisherman's net proves to be, when placed in its proper element, a structure of surprising beauty and full of animal life, existing under peculiar and

ALCYONIUM.

wonderful conditions. The manner in which the polypes protrude and retract themselves has been likened to that in which the horns of a snail are protruded and retracted. Their tentacula are short, obtuse, and elegantly fringed at the margins. The external part of the body of the polype is a membrane so transparent, that by the employment of a magnifying-glass the whole internal structure can be seen through it. See fig. 8, *b*. This delicate membrane, how-

ever, is composed of two very thin membranes, intimately united, the outer of which increases in thickness at the base of the polype, coalesces with that of adjacent polypes, and is continuous with the common leathery skin of the polype-mass. The inner membrane retains its extreme delicacy throughout; it extends into and lines the cell of the polype (see fig. 4) and the tube or canal which proceeds from the cell into the mass, and is



3. *Alcyonium digitatum*:
b, the polype fully protruded, magnified; *c*, the polype partially protruded, magnified.

thus also continuous with the corresponding membranes of other polypes; for the canals divide into branches in their course from the base of the polype-mass to the surface, and the intimacy of union in the whole is increased by a fine tubular network which occupies the spaces between the principal canals. If a portion of an *A.* is irritated, not only the particular polypes immediately subjected to irritation retract themselves as to withdraw from danger, but the gradual collapse and contraction of the whole polype-mass shows that the irritation has been felt through it all. The contraction of the mass is owing to a discharge of water which the polypes, when protruded, im-



4. *Alcyonium digitatum*:
Section showing internal structure.

bibe, and which circulates through and distends the polype-mass, so that when the polypes are undisturbed and in full activity, it has twice or three times the size which it has as we find it cast out upon the beach. The stomach of each polype is cylindrical (as may be seen in fig. 3, *b*, immediately under the oval disk or expanded tentacula), and beneath it is a comparatively large cavity, into which hang loosely (as may also be seen in the figure just referred to) eight twisted filaments or threads, the use of which is not well ascertained, and has been the subject of very different

ALCYONIUM.

opinions among naturalists. In the gelatinous substance of the polype-mass, which fills the interstices of the tubular network, numerous crystalline calcareous spicula lie immersed, like the *raphides* (q. v.) found in the intercellular passages of some plants. They are toothed on the sides, but are of various forms, and have no organic connection with any part of the animal structure; their only use apparently being to impart some degree of strength to the whole. These spicula are of general occurrence in zoophytes of this order, and are secreted by the common skin of the polype-mass. The polype-mass increases by *gemmæ* or buds, which grow into new branches; but the propagation of the species takes place by *ova* or eggs, which first appear as minute smooth warts on the membrane of the canals in the interior. The constriction of the neck, by which they grow, separates them from the parent membrane, and they move through the canal by means of very minute vibrating cilia or hairs with which they are furnished, until they reach the stomach of a polype, into which they enter, and through which they slowly proceed till at last they are ejected by the mouth (the only opening), and committed to the waves and tides. The ova seem capable of feeling while within the parent mass, and may be observed to move backwards and forwards, and to contract their sides as if by voluntary action in their passage through the body of the polype. These wonderful phenomena of nature are the more easily observed, because the ova are of a deep vermilion color, beautifully contrasting with the pure white of the polype, through the tunic of which they are seen.—One of the most remarkable known species of A., and the largest, is that called *A. poculum* or Neptune's Cup, which was discovered by Sir Stamford Raffles upon the coral-reefs of Sumatra, and



Alcyonidium gelatinosum.
Reduced.

sometimes much lobed, as in the preceding figure, some-

is found in the neighborhood of Singapore. It grows erect, sometimes attaining nearly three feet in height and eighteen inches in diameter. Specimens are now frequent in museums in this country.

The name *Alcyonium* was formerly also given to many zoophytes now found to be of very different structure, some of which now bear the name *Alcyonidium*, others that of *Alcyonella*. The genus *Alcyonidium* belongs to the class of Zoophytes called *Polysoa*, order *Infundibulata*. See ZOO-PHYTES. The most common British species is *Alcyonidium gelatinosum*. It resembles a sponge in appearance, but is more pellucid and gelatinous, and is full of polypes, each having 15 or 16 long slender tentacula. It is attached to old shells and stones, and is

ALDBOROUGH—ALDEBARAN.

times almost simple. The color varies from a very pale brown to clear yellow; the surface is speckled with minute dots, from which, when it is placed in sea-water, the polypes protrude. The polype differs widely from that of *Alcyonium* in having an intestine, which, proceeding from the stomach to the aperture of the cell, opens there by an orifice distinct from the mouth, a difference characteristic of the classes to which they respectively belong. The ova are clothed with cilia, and their motions either are, or most strikingly resemble, voluntary motions.—*Alcyonella* belongs to the class Polyzoa, order *Hypocreptia*. See ZOOPHYTES. There is one British species, *Alcyonella stagnorum*, found in stagnant waters, especially in autumn, in shapeless, jelly-like masses, of a blackish-green color, usually adhering to the leaves of aquatic plants. The jelly like mass is traversed from base to surface by multitudes of tubes, which open by a roundish or five-angled aperture; the heads of the polypes project a little way from the aperture, and expand into a circle of about fifty tentacula. About 1,600 polypes are situated on a square inch of the surface of the mass. The number of tentacula on a specimen of moderate size has been computed at more than 5,000,000. The tentacula are covered with minute cilia, only to be observed with a high magnifying power, by means of which a constant whirlpool is maintained, centring in the mouth of the polype, and essential, probably, for breathing as well as for the supply of food. Each polype is organically connected with the mass, its tunic being continuous with the tube. The alimentary canal has two openings. The ova are to be found in vast numbers in the tubes which traverse the mass. They are dark brown, whilst the tubes are colorless or tinted with green, of a lens-like form and destitute of cilia. They are produced from all parts of the inner side of the gelatinous tubes; and as there seems to be no aperture for their escape, it is supposed that they are liberated from the parent mass only on its death and decomposition. The *Alcyonella* is an interesting object in a fresh-water aquarium, but is rather difficult to preserve. It is not, however, always to be found even in ponds where it might be expected, and is abundant in particular seasons and rare in others. The ova are probably capable of remaining long dormant, until some occurrence of circumstances favors the development of the germ of life which they contain. See Johnston's *History of British Zoophytes*, and more recent works on the Cœlenterata and other invertebrates.

ALDBOROUGH, *awld būr-ūh*: decayed town of the West Riding of Yorkshire, on the river Ure and on Watling Street. Before 1832 it sent two members to parliament. Extensive remains of the Roman town of Isurium have been found here.—There is another small coast town of the same name in the n.e. of Suffolk.

ALDEBARAN, n. *āl-dēb'ā-rān*, [Ar. *al-dabarān*, the following—from *dabara*, to follow]: a star of the first magnitude in the eye of Taurus—so called because it follows upon the Pleiades. It is the largest and most brilliant of a

ALDEHYDE—ALDEHYDES.

cluster of five which the Greeks call the Hyades. From its position, it is sometimes termed 'the Bull's Eye.'

ALDEHYDE, n. *āl'dē-hīd* [a contraction of *alcohol* and *dehydrogenitum*]: a pungent volatile liquid obtained by the removal of hydrogen from an alcohol. **AL'DEHY'DIC**, a. *-hī'dīk*, of or pertaining to.

ALDEHYDE ($C_4H_4O_2$): a volatile fluid produced by the oxidation and destructive distillation of alcohol and other organic compounds. Its discoverer, Döbereiner, called it *light oxygen ether*; its present term is an abbreviation of *alcohol dehydrogenitum*, its composition being represented by that of alcohol from which two atoms of hydrogen have been abstracted. In the article on this subject in Watts's *Dictionary of Chemistry*, ten different modes of obtaining this substance are given. The following is the method described by Liebig. A mixture of two pints of alcohol, two pints of water, three pints of black oxide of manganese, and three pints of sulphuric acid, is distilled in a large retort connected with a receiver surrounded with ice. As soon as about three pints of the liquid have distilled over, the operation is stopped. The product thus obtained is rectified, and all that passes over above 140° is rejected. The impure A. thus obtained is mixed with twice its volume of ether, and then saturated with ammonia gas. Crystals of aldehyde of ammonia are formed, which are then mixed with dilute sulphuric acid; and distilled in a flask. The vapors of A. are first dried by passing them over chloride of calcium, and then condensed in a well-cooled receiver. The A. thus prepared is a thin, transparent, colorless liquid, very inflammable, burning with a blue flame, and having a spec. gr. of 0.8, a boiling point of about 71° , and a pungent, suffocating odor. It mixes in all proportions with water, alcohol, and ether, and dissolves sulphur, phosphorus, and iodine. As is shown in the article **ALCOHOLS**, it constitutes an intermediate state in the oxidation of alcohol into acetic acid. When potassium is gently heated with aldehyde, one atom of H is replaced by one of K, the resulting compound being aldehyde of potash, $C_4H_3KO_2$. Various compounds of this kind may be formed, of which the most important is aldehyde of ammonia, or aldehyde-ammonia $C_4A_3(NH_4)O_2$, which is obtained in transparent shining crystals, and is a compound that has led chemists to the discovery of a large number of very remarkable derivatives.

ALDEHYDES: a class of organic compounds, intermediate between primary alcohols and acids; the ordinary aldehyde, described in the preceding article, being (see **ALCOHOLS**) intermediate between ordinary alcohol and its corresponding acid—viz., acetic acid. Each aldehyde is derived from the corresponding alcohol by the abstraction of two atoms of hydrogen, and each aldehyde is converted into its corresponding acid by the addition of two atoms of oxygen.

Nine A. of the form $(C_2^nH_2^nO_2)$, corresponding to $n = 2, 3, 4, 5, 7, 8, 11, 12$, and 16, are at present known, the

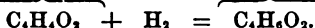
ALDER.

simplest being ordinary or acetic aldehyde, $C_2H_4O_2$, and the highest being palmitic aldehyde, $C_{32}H_{62}O_2$.

Among A. not connected with the preceding group may be mentioned various organic compounds which have been recently shown to belong to this class—thus, acrolein, $C_3H_4O_2$, is acrylic aldehyde; camphor, $C_{10}H_{16}O$, is campholic aldehyde; bitter-almond oil, $C_7H_6O_2$, is benzoic aldehyde; oil of cumin, $C_{10}H_{12}O_2$, is cuminic aldehyde; oil of cinnamon, $C_{15}H_{12}O_2$, is cinnamic aldehyde. Most of these A. are obtained directly from plants, and either exist in them ready formed, or are given off as volatile oils on distillation with water. Owing to their great tendency to oxidize into their corresponding acids, the A. are powerful reducing agents. They reduce the silver in silver salts to the metallic state. On the other hand, by the action of nascent hydrogen upon the A., the corresponding alcohols are regenerated. Thus ordinary alcohol may be obtained from ordinary aldehyde.

Acetic Aldehyde.

Ethyl Alcohol.



With the acid sulphites of the alkalis the A. forms sparingly soluble crystalline compounds. When treated with caustic alkali, the A. are converted into resinous substances. The A. have a great tendency to form polymeric compounds. Thus ordinary aldehyde passes readily into two polymeric modifications (see ISOMERISM): (1) Par-aldehyde, a liquid which does not boil till 247° ; (2) Metaldehyde, a solid body which sublimates at 248° , and is converted into ordinary aldehyde at 356° .

For a good account of the A., see the chapter on that subject in Naquet's *Principes de Chimie, fondée sur les Théories Modernes*, in which will be found a full account of the A. derived from the monatomic alcohols, of the modes of preparing them, of the properties common to all A., and those specially belonging to different series, the rational formulæ and constitution of A., and the A. derived from diatomic alcohols or glycols, in which Naquet includes not only salicylous, salicylic, and glycolic A., but also that remarkable product, Furfurol (q. v.).

ALDER, a. *âl'dér* [OE. and AS. *alder*, of all, wholly; entirely—from AS. *æl*, all]: in OE., a common prefix of adjectives in superlative degree, and signifying, of all; wholly; entirely; in the highest degree: as, ALDERFIRST, first of all. ALDERLAST, last of all. ALDERLEST, least of all. ALDERLIEFEST, *lief est* [AS. *leofest*, most loved]: most loved, or dearest of all. ALDERMOST, most of all. ALDERWISEST, wisest of all. *Note*.—In later times 'all' seems to have been substituted for *alder*—see *all* as a prefix.

ALDER, n. *âl'dér* [AS. *alr*: Ger. *eller*: Icel. *elrir*: Sw. *al*: L. *alnus*]: a tree resembling the hazel; the *Alnus glutinosa*, Ord. *Betulacæ*, whose charcoal is used in the manufacture of gunpowder. AL'DERN, a. made of alder.

ALDER (*Alnus*): genus of plants of the natural order *Betulacæ* (regarded by many as a sub-order of *Amentacæ*:

ALDER.

see BIRCH and AMENTACEÆ). The genus consists entirely of trees and shrubs, natives of cold and temperate climates; the flowers in terminal, imbricated catkins, which appear before the leaves; the male and female flowers in separate catkins on the same plant; the male or barren catkins loose, cylindrical, pendulous, having the scales 3-lobed, and each with three flowers whose perianth is single and 4-partite; the fertile catkins oval, compact, having the scales sub-trifid, and each with two flowers destitute of perianth; styles two; fruit, a compressed nut without wings.—The COMMON or BLACK A. (*A. glutinosa*) is a native of Britain, and of the n. parts of America and Asia. It has roundish, wedge-shaped obtuse leaves, lobed at the margin and serrated. The bark,

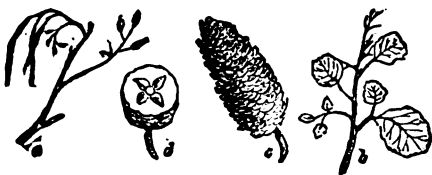


Alder Tree.

except in very young trees, is nearly black. It thrives best in moist soils, and helps to secure swampy river-banks against the effects of floods. It attains a height of 30-60 ft. Its leaves are somewhat glutinous. The wood is of an orange-yellow color, not very good for fuel, but affording one of the best kinds of charcoal for the manufacture of gunpowder, upon which account it is often grown as coppice-wood. Great numbers of small A. trees are used in Scotland for making staves for herring-barrels. The wood is also employed by turners and joiners; but it is particularly valuable on account of its property of remaining for a long time under water without decay, and is therefore used for the piles of bridges, for pumps, sluices, pipes, cogs of mill-wheels and similar purposes. The bark is used for tanning and for dyeing, also for staining fishermen's nets. It produces a yellow or red color, or with copperas, a black color. The leaves and female catkins are employed in the same way, by the tanners and dyers of some countries. The bark is bitter and astringent, and has been used for gargles, and also administered with success in ague. The seeds are a favorite food of greenfinches.—The Alder is one of the

ALDERMAN.

ornaments of many of the most exquisite landscapes in Britain. The dark green of its foliage, and the still darker hue of its bark, contrast beautifully with the colors of the other trees with which it is usually associated on the banks of rivers. In boggy grounds it is often almost the only kind of tree that appears, and in many parts of the Highlands, groups of alders are scattered over the lower and moister parts of the mountain-slopes. The individual tree viewed by itself may be regarded as somewhat stiff and formal in appearance; but in groups or clusters, it is always far otherwise.—The common *A.* ceases on the Swedish shore of the Gulf of Bothnia, in the south of Angermannland, and is



Alder leaves, etc.:

a, a branchlet with male and female catkins, reduced; b, a branchlet with leaves and female catkins in a more advanced stage, reduced; c, the fruit-bearing female catkin; d, the same cut across, to show the small nuts or seeds.

there called the *Sea A.*, because it is only in the lowest grounds near the sea that it occurs.—The GRAY or WHITE *A.* (*A. incana*), a native of many parts of continental Europe, especially of the Alps, and also of N. Amer. and of Kamtchatka, but not of Britain, differs from the common *A.* in having acute leaves, downy beneath, and not glutinous. It attains a rather greater height, but in very cold climates and unfavorable situations appears as a shrub. It occurs on the Alps at an elevation above that to which the common *A.* extends, and becomes abundant also where that species disappears in the northern part of the Scandinavian peninsula. The wood is white, fine-grained, and compact, but readily rots under water.—The bark is used in dyeing.

—*A. cordifolia* is a large and handsome tree, with cordate acuminate leaves, a native of the s. of Italy, but found to be quite hardy in England. Some of the American species are mere shrubs. The bark of *A. serrulata* is used in dyeing.—Several species are natives of the Himalayas.—The BERRY-BEARING *A.*, or *A. BUCKTHORN*, is a totally different plant. See BUCKTHORN.

ALDERMAN, n. *ál'dér-män*, pl. AL'DERMAN [AS. *eald*, old; *ealder* or *ealdor*, an elder, a chief]: a senior or superior; a civic dignitary next in rank to the mayor. AL'DERMAN'IC, a. *-ík*, in the manner of an alderman. AL'DERMAN'LY, a. *-li*. Note.—Originally a dignity of the highest rank, very nearly that of a king.

ALDERMAN: a title given to a grade of civic officers of municipalities in the United States, and in England, Wales, and Ireland: the corresponding title in Scotland is Bailie. Their functions differ in different cities—in some involving

ALDERNEY—ALDERSHOTT CAMP.

considerable magisterial power, especially in affairs of internal police. Some cities (e.g. Philadelphia), have dispensed with this title for their officials. In New York an A. is a member of the common council elected by the people. The London court of aldermen consists of 26 aldermen, including the lord mayor, and constitutes the bench of magistrates for the city, besides having judicial and legislative authority in the corporation. Whether any definite and invariable functions were connected with the ancient rank of *ealdorman*, is not clearly ascertained. The term was generally applied to persons of high and hereditary distinction, such as princes, earls, and governors. Its special significance in the titles 'A. of all England' (*Aldermannus totius Angliæ*) and 'King's A.' (*Aldermannus Regis*), is not distinctly indicated. There were also aldermen of counties, hundreds, cities, boroughs, and castles.

ALDERNEY, *awl'dér-nî* (Fr. *Aurigny*, Lat. *Aurinia*): island in the English Channel (see CHANNEL ISLANDS), lat. 49° 45' n., long. 2° 13' w., separated from the coast of Normandy by a strait about 7 m. in breadth, called the Race of Alderney. Through this channel, which is very dangerous in rough weather, the remnant of the French fleet escaped after their defeat at La Hogue in 1692. The distances between Alderney and the nearest points of Guernsey, Jersey, and Great Britain, are respectively about 15, 33, and 60 m. The length of the island is about 4 m., the breadth about 1½. The coast to the s.e. is bold and lofty; to the n.e. and n., it descends, forming numerous small bays, one of which, that of Crabby, affords the only anchorage in the island. A harbor of refuge and breakwater have been constructed on the n. side of the island. Six m. to the w. are the Caskets, a small cluster of rocks, on which are three light-houses. The soil in the centre of the island is highly productive; and the A. cows, a small but handsome breed, have always been celebrated. The climate is mild and healthy, and good water abounds. Pop. (1851) 3,333; (1871) 2,738; (1881) 2,039. Education to some extent is universal. The population was originally French, but half the inhabitants now speak English, and all understand it. Protestantism has prevailed here since the Reformation. A. is a dependency of Guernsey, and subject to the British crown. The civil power is vested in a judge appointed by the crown, and six *jurats* chosen by the people. These with twelve popular representatives or *douzainiers* (who do not vote), constitute the local legislature. The court of justice is composed of the judge and jurats, the royal procureur and comptroller and the registrar (*greffier*), nominated by the governor. There is a local militia, consisting of two companies of infantry, and a brigade of artillery. The 'Town,' in a picturesque valley near the centre of the island, contains a few public buildings, among which is the old church, said to have been erected in the 12th c., and a new one in the early English style, with a tower 104 ft. high. The living is a perpetual curacy in the archdeaconry and diocese of Winchester.

ALDERSHOTT CAMP, *awl'der-shôt*: a permanent camp

ALDINE EDITIONS.

for military review, evolution, exercise, and training; comprising 7,063 acres on Aldersholt Heath, 18½ m. from Windsor, Eng.; purchased by the government for £130,000, and opened for the reception of soldiers, 1855. There are usually 10,000 to 15,000 troops of all arms at A.—different regiments occupying it in turn for an experience of camp-life. A thriving town has sprung up near the camp; pop. (1881) 20,140. See BARRACKS.

ALDINE EDITIONS: name given to the works from the press of Aldo Manuzio (q.v.), (Lat. Aldus Manutius) and his family in Venice (1490–1597). Recommended by their intrinsic value, as well as by their handsome exterior, they have been highly prized by the learned and by book-collectors. Many of them are the first editions (*editiones principes*) of Greek and Roman classics; others contain corrected texts of modern classic writers, as of Petrarch, Dante, Boccaccio, etc., carefully collated with the MSS. All of them are distinguished for the remarkable correctness of the typography; the Greek works, however, being in this respect somewhat inferior to the Latin and Italian. The editions published by Aldus, the father, form an epoch in the annals of printing, as they contributed in no ordinary measure to the perfecting of types. No one had ever before used such beautiful Greek types, of which he caused nine different kinds to be made, and of Latin as many as fourteen. It is to him, or rather to the engraver, Francesco of Bologna, that we owe the types called by the Italians *Corsoi*, and known to us as Italics, which he used for the first time in the 8vo edition of ancient and modern classics, commencing with Vergil (1501). Manuzio's impressions on parchment are exceedingly beautiful; he was the first printer who introduced the custom of taking some impressions on better paper—that is, finer or stronger than the rest of the edition. The first example of this is in the *Epistolæ Græcæ* (1499). It would be difficult to name another who has brought so much zeal, disinterestedness, taste, and knowledge to the furtherance of literature, especially classical literature. After his death, 1515, his business was superintended by his father-in-law, Andreas Asulanus. Paul, the son of Aldus, possessed the same enthusiasm for Latin classics that his father had for Greek. He died at Rome in 1597. The printing establishment founded by Aldo continued in active operation for 100 years, and during this time printed 908 different works. The distinguishing mark is an anchor, entwined by a dolphin, generally with the motto, *Sudavit et aluit*. Under the direction of the grandson of the founder, it lost the superiority which it had formerly maintained over all the other printing-presses in Italy. The demand which arose for editions from this office, and especially for the earlier ones, induced the printers of Lyon and Florence, about 1502, to begin the system of issuing counterfeit Aldines. The Aldomania has considerably diminished in later times. Among the A. works which have now become very rare may be mentioned the *Horæ Beatæ Mariæ Virginis* of 1497; the *Virgil* of 1501; and the *Rhetores Græci*; besides the editions from 1494 to 1497, which are now extremely rare. The most

ALDROVANDI—ALDSTONE.

complete collections known are those of the former Grand Duke of Tuscany, and of Renouard, the bookseller of Paris. In 1834 appeared a third edition of the monograph published by Renouard, *Annales de l'Imprimerie des Aldes, ou Histoire des Trois Manuces, et de leur Editions: par A. Renouard* (Paris, 1834). Ebert has published a catalogue of all the authentic A. E. in the supplement to Vol. I. of his *Bibliographical Dictionary*.

ALDROVANDI, *âl-dro-vân'dē*, **ULYSSES**: prob. aht. 1522–1605; b. Bologna: one of the most distinguished naturalists of the 16th c. He was descended of a noble family, and received an excellent education, partly in his native city and partly at Padua. Some of his religious opinions having been called in question, he travelled to Rome in 1550 to vindicate himself; and while there, studied Roman antiquities, and wrote a treatise on ancient statuary. At Rome, he formed the acquaintance of Rondelet. On his return, he studied botany, and having taken his degree in medicine at the Univ. of Bologna in 1553, he was in the following year appointed to the chairs of Philosophy and Logic, and to the lectureship on Botany. He practiced medicine for some time in Bologna, and appears after a short time to have exchanged some of the chairs which he held in the university for that of Natural History. He established the Botanical Garden at Bologna in 1567. He was employed many years, in forming a museum of natural history, which he bequeathed to the senate of Bologna, and it became the foundation of the splendid public museum of that city, where many of A.'s specimens remain to this day. He left at his death, a prodigious mass of valuable manuscripts, still in the public library of Bologna, in which there is probably much correspondence of eminent men, showing the first steps of the science of natural history, after the long dormancy of the middle ages. All his studies and collections were made subservient to his work on Natural History, the first vol. of which—on Birds—appeared in 1599. Six vols. appeared during A.'s life; other seven were published under the direction of his colleagues and pupils after his death. The story, that, by his scientific pursuits, A. reduced himself to great poverty and that he died in a public hospital at Bologna, though Bayle has adopted it in his dictionary, has no sufficient evidence. It may well be doubted. Complete editions of A.'s works are rare, the vol. on Minerals especially so. A. has been censured for excessive copiousness in things of little importance—due evidently to his conscientious anxiety to set forth all that is known on every subject of which he treats.

ALDSTONE, *awld'ston*, or **ALSTON**, *awl'ston*, sometimes called **ALSTON MOOR**: market-town of the county of Cumberland, Eng., 30 m. e.s.e from Carlisle. The parish of A. contains extensive and very productive lead mines, formerly belonging to the earls of Derwentwater, and now to the Lords Commissioners of the Admiralty. The town has manufactures of worsted yarns and flannel. It is in a mountainous district, on the declivity of a steep hill, near

ALE—ALEMAN.

the confluence of the Nene and South Tyne. The produce of the lead mines has fallen off considerably during recent years. Pop. about 2,500; of parish (1871) 5,680; (1881) 4,621.

ALE, n. *āl* [AS. *eale*; Icel. *öl*; Lith. *alus*, a kind of beer; Gael. *ol*, to drink]: beer; a drink made from malt. **ALE-BERRY**, n. *āl'ber-rī*, a beverage made by boiling ale with spice, sugar, and sops of bread. **ALE-COST**, an herb. **ALE-HOOF** [AS. *heifod*, a head]: ground ivy; the *Nepeta glechōma*, or *Glechōma hederacē*, Ord. *Labiātæ*, used for preserving ale before the use of hops. **ALEGAR**, n. *āl'è-gār* [*ale*, and F. *aigre*, sour]: sour ale.

ALE: apparently the current name in England for malt liquor in general before the introduction of hops. This took place, according to Johnston (*Chemistry of Common Life*) as late as the reign of Henry VIII., about 1524. As the use of hops was derived from Germany, the German name for malt liquor (*bier*), *beer*, was used at first to distinguish the hopped liquor from *ale*, the unhopped. The word *ale* had in all likelihood been introduced by the Danes and other Scandinavian settlers—for *öl* (allied probably to *oil*) is still the name for malt liquor in the Scandinavian tongues—and must have driven out the *beor* of the Anglo-Saxons, which that people had in common with the other Teutonic nations. As now used, ale signifies a kind of beer (see **BEER: FERMENTATION**), distinguished chiefly by its strength and the quantity of sugar remaining undecomposed. Strong ale is made from the best pale malt; and the fermentation is allowed to proceed slowly, and the ferment to be exhausted and separated. This, together with the large quantity of sugar still left undecomposed, enables the liquor to keep long without requiring a large amount of hops. The Scotch ales are distinguished for the smallness of the quantity of hops they contain, and for their vinous flavor. They are fermented at an unusually low temperature. The ales of Edinburgh and Prestonpans have a high reputation. Burton ale is the strongest made, containing as much as 8 per cent. of alcohol; while the best brown stout has about 6 per cent., and common beer only 1 per cent. India pale ale differs chiefly in having a larger quantity of hops.

A-LEE, ad. *à-lē'* [AS. *hléo*, shelter]: a term used to denote the position of a ship's helm when put in a direction opposite to that from which the wind blows, thus bringing the ship's head to windward: it is expressed by the French *sous le vent*, or 'under the wind.'

ALEMAN, *āl'e-măn*, **MATEO**: famous Spanish novelist, b. Seville, about the middle of the 16th c., d. in Mexico during the reign of Philip III. In 1604, he published a poetical biography of St. Antonius of Padua; and in 1608, while in the New World, an *Ortografia Castellana*, written during his voyage; but his great work is *Guzman de Alfarache* a novel with a rogue for the hero, like some of the

ALEMANNI.

more recent English fictions. It was first published at Madrid in 1599, became immensely popular, and in half a dozen years had gone through twenty-six editions, consisting of not less than 50,000 copies, in Spain and other countries. As regards the delineation of manners and the purity of style, this masterly creation of A. ranks next to that most celebrated of all Spanish novels of the same character—the *Lazarillo de Tormes* of Mendoza. It shows keen observation, and a ripe and cultivated mind. Mendoza's hero has the advantage in originality, freshness, and vivacity; but Guzman exhibits a richer variety of gifts in the various characters he is compelled by circumstances to assume, such as a stable-boy, beggar, thief, coxcomb, mercenary, valet, pander, merchant, etc. The manners of the author's own age are hit off with great skill and effect, and the narrative is interspersed with shrewd and solid reflections and moralizings. A. is considered to rank with Mendoza, Cervantes, etc., as one of the masters of the Castilian style.

ALEMANNI, *äl'ē-män'i*, [that is, *all-men*]: name of a military confederacy of several German tribes which appeared on the Lower and Middle Maine about the beginning of the 3d c. Caracalla fought with them first on the Maine in 211, but without conquering them; Alexander Severus was equally unsuccessful; but Maximinus at length succeeded against them, and drove them beyond the Rhine. After his death, they again invaded Gaul, but were defeated by Posthumus, who pursued them into Germany, and fortified with ramparts and ditches the boundary of the Roman territory, called the *Agri Decumates*. The mounds near Pförung, on the Danube, the rampart extending through the principality of Hohenlohe to Jaxthausen, and the ditch with palisades on the n. side of the Maine, are remains of these works. The A., however, did not desist from their incursions, although they were repeatedly driven back. After 282, being pressed upon from the n.e. by the Burgundians, they took up permanent settlements within the Roman boundary from Maintz to Lake Constance. At last, Julian came (357) to the relief of Gaul, which had been suffering from the incursions of the A., and soon compelled eight of their chiefs to sue for peace. Their united force, in their principal battle with Julian, amounted to 35,000 men. After the 5th c., the confederated nation is spoken of as A. and Suavi or Suevi. In the course of the 4th c., they had crossed the Rhine, and extended as far west as the Vosges, and south to the Helvetian Alps. At length, Clovis, king of the Franks, broke their power in 496, and made them subject to the Frankish dominion. The s. part of their territory was formed into a duchy, called Alemannia. The name of Swabia came afterwards to be applied to the part of the duchy lying e. of the Rhine. From the A., the French have given the name of *Allemands* and *Allemagne* to Germans and Germany in general, though the inhabitants of the n. of Switzerland, with those of Alsace and part of Swabia, are the proper descendants of the Alemanni.

ALEMBERT.

ALEMBERT, *à-lin-bâr'*, JEAN LE ROND D': 1717-83; b. Paris: one of the most distinguished mathematicians and writers of the 18th c. He was the illegitimate son of Madame de Tencin, a woman of considerable notoriety in the time of the Regency, and of a M. Destouches. He was exposed by his mother on the steps of the church of St. Jean-le-Rond, and the policeman who found him committed the seemingly dying infant to the care of the wife of a poor glazier, thinking it too weak to be taken to the dépôt. The father, without publicly avowing the child, secured to him an allowance of 1,200 francs yearly. At the age of twelve, he entered the College Mazarin, where he soon gave indication of the passion for mathematical studies which distinguished him through life. On leaving college, he returned to the humble home of his kind foster-mother, where he continued to live and pursue his favorite studies for nearly forty years, sharing with her household his small revenue. Although the good woman loved him as a son, so little did she encourage his exclusive devotion to science, that when he spoke of his discoveries or writings, she replied with a sort of pity: 'You will never be anything but a philosopher; and what is a philosopher, but a fool who torments himself during his life, that people may talk about him when he is dead.' At first, his friends urged him to qualify himself for some profitable career; but after trying for a time the study of law, and then of medicine, he gave up the attempt as hopeless, and abandoned himself without reserve to his passion for science. In 1741, at the age of 23, he was admitted a member of the Academy of Sciences, having already attracted attention by several physico-mathematical tracts. Two years later appeared his *Treatise on Dynamics*, founded on a new and fertile principle which makes an epoch in mechanical philosophy. 'This principle consists,' says Condorcet, 'in establishing the equality, at every instant, between the changes which the motion of the body has undergone, and the forces which have been employed to produce them;' in other words, it reduces all the laws of motion to the consideration of Equilibrium. Among the more important of his other scientific works are: his *Theory of the Winds*, which gained the prize of the Academy of Berlin, 1746, and contains the first conception and use of the Calculus of Partial Differences; a treatise on the *Precession of the Equinoxes*, 1749, giving for the first time an analytical solution of that phenomenon, as well as of the nutation of the earth's axis; *Essay on the Resistance of Fluids*, 1752; *Researches on some Important Points in the System of the Universe*, 1754 and 1756. His *Mathematical Opuscules* contain an immense number of memoirs, some on new subjects, some containing developments of his previous works.

But A. did not confine himself to physical science. Diderot (q.v.) having conceived the idea of the famous *Encyclopédie*, enlisted the services of A., who wrote the *Preliminary Discourse*, which is allowed by all to be a noble tribute to literature and philosophy—a model of lucid and

ALEMBIC.

eloquent exposition, combining an immense extent of knowledge with rare judgment. Besides numerous articles in the *Encyclopédie*, he published *Elements of Philosophy*, 1759; *Mélanges of Literature and Philosophy*; *The Destruction of the Jesuits*, etc. He also wrote a great many *éloges* of members of the Academy of Sciences, of which he was elected sec. 1772. His literary works have been published in a collected form, new edition, by Bossange (Paris, 1821, 5 vols. 8vo). This edition contains the correspondence of A. with Voltaire and the king of Prussia. His scientific works have never been collected.

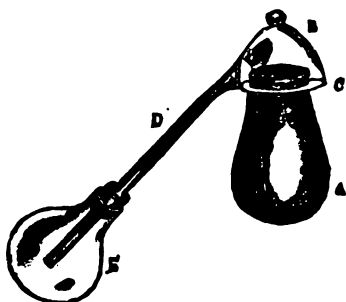
A. gave striking proof of how little he regarded riches and distinctions, or the flatteries of the great, and how genuine was his independence. Frederick II. of Prussia offered him the presidency of the Academy of Berlin, 1752, but he declined to leave France, and only accepted a subsequent offer of a pension of 1,200 francs. The king of France granted him a similar sum. In 1762, Catharine II. of Russia invited him, through her ambassador, to undertake the education of her son, with a salary of 100,000 francs; and when he declined, she wrote him a letter with her own hand, urging that to refuse to contribute to the education of a whole nation was inconsistent with his own principles: and inviting him, if he could not reconcile himself to the breaking-off of his pursuits and friendships, to bring all his friends with him, and she would provide both for them and for him everything they could desire. But A. remained steadfast. When the Grand Duke afterwards visited Paris, he good-humoredly reproached A. with his refusal; and to the excuse of the rigor of the climate and feeble health, the prince replied, with the compliment: 'In truth, monsieur, it is the only false calculation you have made in your life.' A. was never married. He was tenderly attached for many years to a Mademoiselle Espinasse, although their intimacy, it is believed, never went beyond a warm friendship. The death of the lady was a severe blow to A. His own health began to give way; for he was suffering from the stone, and would not consent to an operation. He d. 1783, Oct. 29.

A. was truthful, frank, and benevolent. He held it as a principle of morals that a man has no right to dispose at will of his own superfluous means while there are others in want of the necessities of life. A stigma has attached to the name of A. from his intimate association with Voltaire and other assailants of Christianity; but A. in his published writings never denied the Christian revelation. From his private correspondence it is gathered that his opinions favored a simple theism.

ALEMBIC, n. *ă-lēm'bîk* [Ar. *al*, the; *anbig*, a chemical vessel in the shape of a gourd: Sp. *alambique*: Gr. *ambiks*, a cup, a goblet]: a gourd-like vessel with a lid for distilling; a chemist's retort—now obsolete. It was a form of still introduced into chemistry by the alchemists, and used by ancient experimenters in manipulative chemistry for the distillation and sublimation of substances, such as alcohol, or formic acid obtained by heating a decoction of red ants

ALEMTEJO—ALENÇON.

in water. The vessel consisted of a *body*, *cucurbit*, or *matrass*



Alembic.

(A), in which the material to be volatilized was placed; a *head* or *capital* (B) into which the vapors rose, were cooled, and then trickled down to the lower part (C), whence by a *pipe* (D) the distilled product passed into the *receiver* (E). Where very volatile liquids were being distilled, it was customary to introduce the receiver (E) into a vessel with cold water, so as to

increase the perfectness of the condensing part of the arrangement. The A. has now been entirely superseded by the retort and receiver or by the flask attached to a Liebig's condenser. See RETORT.

ALEMTEJO, *á-lêng-tâ'zho*: province in the s. of Portugal; 9,888 sq. m. It is partly washed by the Atlantic on the w., and stretches to the Spanish frontier on the e. It is traversed by a number of mountain-chains, and is watered by the Tagus, Guadiana, and Saado or Sado. In the s. and w. the climate is hot and dry; the plains are covered with brown heath, unrelieved by a tree or a shrub, and only broken at intervals by marshy wastes, while the vegetation is extremely scanty. In the e. the valleys are fertile, and the mountains adorned with forests. The productions are singularly abundant. They consist of wheat, barley, rice, maize, the vine, and a variety of choice fruits—such as the citron, the lemon, the fig, the pomegranate. In the valleys, the principal trees are the oak with edible fruits, the evergreen-oak, the cork-oak, the chestnut, and the pine; in the plains, lavender, rosemary, juniper, myrtle. The pasturage is extraordinarily fine. Great attention is given to the rearing of swine, goats, and sheep, and in a less degree, of horned cattle, asses, and mules. As the population is sparse, more grain is produced than is consumed; but manufactures are backward. Even mining, which might be very profitable, is neglected. Chief towns are Evora (the cap.), Elvas, Portalegre, Beja, Estremoz, and Mertola. Pop. (1878) 350,103.

ALENÇON, *á-lîn-sôn'*: chief town of the dept. of Orne, France; on the Sarthe, lat. 48° 25' n., and long. 0° 51' e. The town-church—a structure of the 16th c., in the Gothic style, contains the remains of the tombs of the A. family, which were almost completely destroyed at the Revolution. It has a fine porch and exquisitely painted windows. A. is a clean and handsome town, with good streets and a delightful public walk. The inhabitants produce excellent woolen and linen stuffs, embroidered fabrics, straw-hats, lace-work, artificial flowers, hosiery, etc. The manufacture

ALENGTH—ALEPPO.

of A. point-lace (*points d'A.*), although still important, is not as extensive as formerly. The cutting of the so-called A. diamonds (quartz-crystals), found in the vicinity of the town, has also greatly declined. Pop. (1881) 15,939.

The old DUKES of A. were a branch of the royal family of Valois, and were descended from Charles of Valois, who perished at the battle of Crecy in 1346. His grandson, John I., fell at Agincourt in 1415. His successor, John II., allying himself with the enemies of the court, was twice condemned to death, but pardoned. René, son of John II., also excited, not without cause, the suspicion of the French monarch, Louis XI., who confined him for three months in an iron cage at Chinon; but as the parliament had never condemned him, he was released at the death of Louis, and restored by Charles VIII. to his title and estate. René's son, who had married the sister of Francis I., was general of the advance-guard of the French army in the Netherlands. He commanded the left wing at the battle of Pavia, where, instead of supporting the king at a critical moment, he fled with his troops; and to him, therefore, has been attributed both the disastrous defeat sustained by the French, and his sovereign's falling into the hands of the enemy. With him expired the old House of A. The duchy was then given to the Duke of Anjou. Louis XIV. conferred it upon the Duke of Berri, and Louis XVI. on the Count of Provence.

ALENGTH, ad. *ă-lěngth'* [*a*, and *length*]: stretched to the full extent.

ALEPPO, *ă lěp'pō*: town in the n. of Syria, cap. of a Turkish vilayet of the same name, between the Orontes and the Euphrates, on the banks of the little desert stream, Nahr-el-Haleb. It stands in a large hollow, surrounded by rocky hills of limestone. The fruitful gardens, celebrated for their excellent plantations of pistachios, are the sole contrast to the desolation which environs the city, whose numberless cupolas and minarets, clean, well-paved streets, and stately houses, make it even yet one of the most beautiful in the East. It is a telegraphic station in connection with Damascus, and with Diarbekir, on the Indo-European line. Formerly, it supplied a great part of the East with fabrics of silk, cotton, and wool, and gold and silver stuffs; but in 1822 an earthquake swallowed up two-thirds of the inhabitants, and transformed the citadel into a heap of ruins. The plague of 1827, the cholera of 1832, and the oppression of the Egyptian government nearly completed its destruction. Under the Egyptian power, however, a new citadel and some other edifices were erected; but scarcely half of the mosques and baths have been rebuilt. The aqueduct is the oldest monument of the town. A. is one of the principal emporiums of the inland commerce of Asia. Its port is Alexandretta or Iskanderoon (q. v.). A. has a large trade in cotton and silk goods, skins, tobacco, wine, and oil, and manufactures cloth which is much admired (silk, cotton, wool; flowered and striped), carpets, cloaks, and soap. Once the centre of Saracenic power, it still retains much of the Arabic character, and its citizens are famed for their manners. Pop. (*Alman. de Gotha*, 1884) 70,000.

ALERT—ALESSANDRIA.

ALERT, a. *ă-lert'* [F. *alerte*, take care! an alarm: OF. *allerte*, alert—from old It. *all'erte*, take care! It. *ull'erta*, on the alert]: on one's guard; watchful; sprightly; nimble. **ALERTNESS**, n. watchfulness; nimbleness.—**SYN.** of 'alert': smart; brisk; nimble; active; vigilant; lively; quick; bright; watchful; prompt; sprightly; agile;—of 'alertness': alacrity; briskness; agility; activity.

ALESIA, *a-lē'shī-a*: town of ancient Gaul, the siege and capture of which form one of Cæsar's greatest exploits. The Gauls were making a last effort to shake off the Roman yoke; and Vercingetorix, their bravest leader, after several defeats, had shut himself up with 80,000 men in A., there to await the reinforcements which he expected from a general insurrection of the country. The town was on a lofty hill, and well fitted for defense. Cæsar, with his army of 60,000 men, completely surrounded the place, with the view of starving it into a surrender. He fortified his position by two lines of rampart of prodigious extent and strength; one towards the town, for defense against the sallies of the besieged; the other towards the plain, against the expected armies of relief. Before they could assemble, 250,000 strong, he was ready for them; and all their assaults, combined with the desperate efforts of the besieged, were of no avail. A. was obliged to surrender, and Vercingetorix was made prisoner. A. was afterwards a place of some note under the empire, but was destroyed by the Normans in 864. Near the site of the ancient A., w. of Dijon, stands the modern village of Alise or Sainte-Reine.

ALESSANDRIA, *ăl-ēs-sân'drī-î*: principal fortress and town of the province of the same name in the n. of Italy; in a marshy country, near the confluence of the Bormida and Tanaro. It was built in 1168 by the inhabitants of Cremona, Milan, and Placentia, as a bulwark against the emperor Frederick I. Its original name was Cæsarea, but it was afterwards called A. in honor of Pope Alexander III., who established a bishopric in it. Designed at first as a fortress to guard the passage of the Bormida and Tanaro, and being the central point of intercourse between Genoa, Milan, and Turin, the town has frequently been the object of sanguinary strife. It was taken and plundered, 1522, by Duke Sforza; besieged, but without success, by the French, under the Prince of Conti, 1657; and again taken, in spite of an obstinate resistance, by Prince Eugene, 1707. After the prostration of Austria at the battle of Marengo, 1800, Bonaparte concluded an armistice at A. with his enemies, according to which, Upper Italy, as far as the Mincio, was ceded to the French, with twelve fortresses. It was the principal armory of the Piedmontese during the insurrection of the Lombardo-Venetian states in 1848-9, when many new fortifications were added to it. At present, the citadel is one of the strongest fortresses in Europe; of enormous size, larger, it is said, than many a town, and in the event of a war in Italy, the whole surrounding country can be inundated by means of the sluices of the Tanaro. A. has considerable trade in linens, woolens, silk fabrics, stockings, hats, etc.,

ALESSANDRIA DELLA ROCCA—ALEWIFE.

and there is much culture of flowers. Two fairs are held in A. annually, and are largely frequented. Pop. exclusive of the garrison (1881) 30,761.

ALESSANDRIA DELLA ROCCA, -děl'lá rök'ká: town of Sicily, province of Girgenti; 17 m. n. by w. from Girgenti; picturesquely situated in a mountainous district. Pop. 6,000.

ALETHIOLOGY, n. ä-lē'thī-ōl'ō-jī [Gr. *alēthēs*, true; *logos*, word, doctrine]: doctrine or principle of truth.

ALETHOPTERIS, n. äl'ē-thōp'tēr-īs [Gr. *alēthos*, truly; *pteris*, fern]: a genus of fossil ferns abounding in the lower coal-formations.

ALEURONE, n. äl-ū'rōn, also **ALEU'RINE**, n. -rīn, [Gr. *aleuron*, flour or meal of any grain]: in bot., organized granules found in a plant, of which the albuminoids are the chief ingredients.

ALEUTIAN ISLANDS, ä-lū'shī-än-, or the CATHERINE ARCHIPELAGO: a group of islands, numbering above 150, and consisting of several clusters, which now belong to the United States, and form an insular continuation of the N. American peninsula of Alaska (q.v.), in the shape of an arch or bridge between North America and Asia; 55° n. lat., separating the Sea of Kamtchatka from the Pacific. They naturally subdivide themselves into five groups: 1. the Komandorski Islands, sometimes not regarded as belonging to the A. I.; 2. the Sasignan, or 'Nearest' Islands; 3. the Rat Islands; 4. the Andreianowsky, which are very small and little frequented; 5. the Fox Islands, among which is Unimak, the largest in the archipelago. The islands are all craggy, and have a desolate appearance from the sea. They exhibit traces of violent internal commotion. Several volcanoes are still periodically active; and warm volcanic springs are numerous. The whole chain or group forms a connecting-link between the volcanic range of the w. coast of America and Kamtchatka. On account of the numerous rocks off their shores, they are not very accessible to ships. Under a climate which exchanges only for a short time the monotonous rigor of winter for a cloudy spring and a hot summer, little can be expected of so niggardly a soil. There are plenty of low scrubby bushes, grasses, moss, and lichens, but no strong and stately growth of trees. An experiment tried at Unalaska of planting pines had very little success. Here and there, however, European kitchen-gardens have been attempted with better results; and the cultivation of the potato has likewise succeeded. The islands abound in springs, and are overrun with foxes, dogs, and reindeer, while the coasts swarm with fish, seals, and otters. The natives, reckoned now not to exceed 1,500, though formerly numerous, are variously regarded as of Asiatic or American origin. Their occupation is hunting and fishing. Their trade is chiefly in furs and fish, of which the principal *entrepôt* is Alexandria, in the island of Rojak.

ALEWIFE (*Alosa tyrannus*): a fish of the same genus with the Shad (q.v.), which, in the end of spring and begin-

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ning of summer, appears in great numbers on the e. coast of North America, and enters the mouth of rivers to spawn. It appears in Chesapeake Bay in March, on the coasts of New York and New England in April, and on those of the British provinces about May 1. It abounds in the Bay of Fundy, but is more rare in the Gulf of St. Lawrence; and the Bay of Miramichi appears to be its n. limit. It ascends rivers only as far as the tide extends, and after spawning, returns to the sea in the middle of summer. It prefers a soft, muddy bottom. Its length is not more than 12 inches. The A. is called *Spring Herring* in some places, and *gasperau* by the French Canadians. It is inferior to the herring, yet it is a valuable fish. The fishery is prosecuted in the rivers, by small-meshed seine-nets set across the stream. Large quantities are taken in the rivers of New England, New Brunswick, and Nova Scotia. The harbor of St. John's, New Brunswick, alone produces from 12,000 to 20,000 barrels annually. This fish, salted, forms a considerable article of export from the n. parts of America to the West Indies.

ALEXANDER I., King of Scotland: younger son of Malcolm Ceanmor, succeeded his brother, Edgar, 1107, and amidst incessant disturbances, governed Scotland for seventeen years with great ability; d. Stirling, 1124. Through his mother, Margaret of England, he had the advantage of mental cultivation. He quelled several formidable insurrections. His determined resistance to the pretensions of the English hierarchy secured the independence of the Scottish Church, while his liberal patronage of the monasteries promoted the strength of the church at home. In 1128 he founded the Abbey of Inchcolm.

ALEXANDER II., King of Scotland: 1198–1249; succeeded his father, William the Lion, 1214; reigned 34 years. He early evinced that wisdom and strength of character, in virtue of which he holds so high a place in history among Scottish kings. The first act of his reign was to enter into a league with the English barons who had combined to resist the tyranny of King John. This drew down upon him and his kingdom the papal excommunication; but two years subsequently (1218), the ban was removed, and the liberties of the Scottish Church were even confirmed. On the accession of Henry III. to the English throne, A. brought the feuds of the two nations to a temporary close by a treaty of peace (1217), in accordance with which he married Henry's eldest sister, the princess Joan (1221). The alliance thus established was broken after the death, without issue, of Queen Joan (1238), and the second marriage of A. with the daughter of a nobleman of France. In 1244, Henry marched against Scotland, to compel A.'s homage. In this emergency the Scottish king received the steady support of the barons, whose ordinary policy was opposition to the crown, and is said, in a short time, to have found himself at the head of 100,000 foot and 1,000 horse. A peace was concluded without an appeal to arms. While engaged in one of those warlike expeditions which the turbulence of his

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subjects so frequently rendered necessary, A. died of fever at Kerrera, a small island opposite Oban, on the w. coast of Argyleshire.

ALEXANDER III. King of Scotland: 1241–85; succeeded his father, Alexander II., at the age of eight; and, two years later, 1251, he married the princess Margaret, eldest daughter of Henry III. of England. The tender age of the sovereign enabled Henry to prosecute successfully for some time his schemes for obtaining entire control over the Scottish kingdom; but long before he reached manhood, A. showed an energy and wisdom which indicated that the attempt to reduce him to submission would be vain. Very shortly after he had come of age he was summoned to the defense of his kingdom against the formidable invasion of Haco, king of Norway (1263), who claimed the sovereignty of the Western Isles. In attempting a landing at Largs, on the coast of Ayr, the Norwegian prince sustained a total defeat; and A., as the result of the important victory, secured the allegiance both of the Hebrides and of the Isle of Man. The alliance between Scotland and Norway was strengthened in 1282 by the marriage of A.'s only daughter, Margaret, to Eric, king of Norway. This princess died in the following year, leaving an infant daughter, Margaret, commonly designated the Maiden of Norway, whose untimely death, on her way to take possession of her throne, was the occasion of so many calamities to Scotland. During the concluding years of A.'s reign, the kingdom enjoyed a peace and prosperity which it did not taste again for many generations. The justice, liberality, and wisdom of the king endeared his memory to his subjects, while the misfortunes that followed his death, heightened the national sense of his loss. His only son, A., who had married the daughter of Guy, Count of Flanders, died without issue, 1284. A. contracted a second marriage in 1285 with Joleta, daughter of Count de Dreux. The hopes of the nation were soon after clouded by his untimely death. Riding on a dark night between Burntisland and Kinghorn, he fell with his horse over a precipice, and was killed on the spot.

ALEXANDER VI. (BORGIA), Pope: 1430–1503; b. Valencia, Spain; the most celebrated of the eight popes (see **POPES**) of this name, also the most infamous one that ever lived, and the most vicious prince of his age (reigned 1492–1503). His most conspicuous qualities were a cunning and insidious cruelty, united with great fearlessness in danger, an unwearied perseverance and vigilance in all his undertakings, a soft and plausible manner towards his inferiors, a harsh and grasping spirit towards the rich. In spite of his talents and his love of art and science, he disdained, throughout his dissolute career, no means of gratifying his lust—not even perjury, murder, and poisoning. His own name was Rodrigo Lenzuoli, but he assumed the ancient and famous name of his mother's family, Borgia. He had five children by Rosa Vanozza, a woman celebrated for her beauty, two of whom equalled himself in criminality, Cæsar and Lucretia. See **BORGIA**. A. was made a cardinal by his

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uncle Calixtus III., and on the death of Innocent VIII. was elevated to the papal chair, which he had previously secured by flagrant bribery. The long absence of the popes from Italy had weakened their authority and curtailed their revenues. To compensate for this loss, A. endeavored to break the power of the Italian princes, and to appropriate their possessions for the benefit of his own family. To gain this end, he employed the most execrable means. He died from having partaken, by accident, as is commonly believed, of poisoned wine intended for his guests. Under his pontificate the censorship of books was introduced, and Savonarola, the earnest and eloquent Florentine priest, who had advocated his deposition, was condemned to be burned as a heretic.

ALEXANDER I. (PAULOWITSCH), Emperor and Autocrat of All the Russias: b. 1777, Dec. 28; d. 1825, Dec. 1 (reigned 1801-25). His education, in which his father, Paul I., had no hand, was conducted by his grandmother, Catharine II., and Col. Laharpe and other tutors. He always showed great affection for his mother, Maria, daughter of Eugene, Duke of Würtemberg. With a humane and benevolent disposition, the 'northern Telemachus' was imbued by Laharpe with the enlightened principles of the age. Professor Kraft instructed him in experimental physics, and Pallas in botany. It was thought better not to devote his attention to poetry and music, as it would have required too much time to make any great acquirements. In 1793 he married Elizabeth, daughter of Karl Ludwig, crown prince of Baden, and, on the assassination of his father Paul (q.v.), 1801, March 24, succeeded him upon the throne. Although A. doubtless knew of the conspiracy to dethrone his father, there is no reason to believe that he contemplated the crime of murder. His accession was celebrated by Klopstock in an ode, *To Humanity*, indicative of the high expectations formed of him. The young ruler seemed deeply penetrated with a sense of his obligation to make his people happy and to promote their civilization and prosperity. He was the first to lay the foundation of the national culture and popular instruction on a regular plan, to introduce organization into the internal administration, unshackle the industry of the nation, raise the foreign commerce of Russia, and awaken in the people a feeling of unity and a spirit of patriotism.

Among the improvements effected by A., his exertions on behalf of the language, literature, and general culture of the Slavonic nations deserve special notice. Seven universities, at Dorpat, Kasan, Charkow, Moscow, Wilna, Warsaw, and St. Petersburg, were either instituted or remodelled by him; 204 gymnasiums and normal schools, and above 2,000 district elementary schools, were erected; and fresh life and activity given to the higher scientific institutions in St. Petersburg and Moscow. He did more than any other sovereign in Europe for the spread of the Bible, by supporting the Bible Society (suppressed, however, in 1826); and in 1820 he had a bishop instituted for the evangelical Lutheran Church, and a general consistory in St. Petersburg

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for the whole empire. He applied large sums to the printing of important works, such as Krusenstern's *Travels* and Karamsin's *History of Russia*, and prized and rewarded scientific merit both at home and abroad. Several scientific collections were purchased by him, and in 1818 he invited two orientalists, Demange and Charmoy, from Paris to St. Petersburg, to promote the study of the Arabic, Armenian, Persian, and Turkish languages. Young men of talent were sent to travel at his expense. By the ukase of 1816 he prepared the way for the abolition of slavery in the Baltic provinces; he also declared that no more gifts of peasants would be made on the crown-lands. As early as 1801 he had abolished the secret tribunal which is said to have extorted confession from political offenders by means of hunger and thirst. The practice of slitting the nose and branding, which had been customary in connection with knouting, was also done away with. Laws were enacted to prevent the abuses of power by governors. The privilege of the nobles, that their inherited property could not be confiscated as a punishment, was raised by him to a common right for all subjects; and much was done in composing a code of civil law. He promoted the manufactures and trade of the empire by amending the laws regarding debt and mortgages, and by the institution of an imperial bank, the construction of roads and canals, making Odessa a free port, and above all, by the ukase of 1818, permitting all peasants in the empire to carry on manufactures, which was before only allowed to nobles and to merchants of the first and second guilds.

A.'s far-sighted policy with regard to the foreign commerce of Russia is shown in various expeditions round the world sent out by him; in the embassy to Persia in 1817, in which was the Frenchman Gradanne, who was acquainted with all the plans of Napoleon respecting India and Persia; in the missions to Cochin China and to Khiva; in the treaties with the United States, Brazil, and Spain; in the naval and commercial treaties with the Porte; and in the settlement on the n. w. coast of America.

A.'s foreign policy was characterized at the outset by a desire for peace; in 1801 he concluded a convention, putting an end to hostilities with England, and made peace with France and Spain. He next entered, with France, into negotiations respecting the indemnification of the minor states in Germany and Italy, but soon discovered how little the French ruler intended any real compensation. As Bonaparte encroached more and more, took possession of Hanover, and annihilated Holland, A. broke with France, and joined the coalition of 1805. He was present at the battle of Austerlitz, when the allied armies of Austria and Russia were defeated, and retired with the remains of his forces into Russia, declining to enter into the treaty that followed. Next year he came forward as the ally of Prussia; but after the disastrous battles of Eylau and Friedland, 1807, he was compelled to conclude the peace of Tilsit, in which he managed to prevent the restoration of the kingdom of Poland, and to mitigate the hard fate of the king of Prussia.

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During the war with France, A. had also to carry on hostilities with Persia and with Turkey.

Dazzled by the fortune and genius of Napoleon, A., in pursuance of the stipulations of Tilsit, acceded with his huge empire to the French continental system, thus altering entirely the foreign policy of Russia. He began by declaring war on England in 1808, and attacking her ally Sweden, wrested from that country, by the peace of Friedrichshamm (1809), the province of Finland. On the other hand, the Russian fleet sent to the aid of the French at Lisbon, fell into the hands of the British. In the autumn of 1808, the two great potentates held a meeting at Erfurt, attended with great splendor, at which A. represented, as it were, the empire of the east of Europe, while Napoleon assumed the dominion of the west. In the war of France against Austria in 1809, A. took only a lukewarm part, although at the peace of Vienna he received the circle of Tarnopol as his share of the spoil of Galicia. Against the Porte, which had not observed the armistice of Slobosta, he renewed the war, which was continued till the peace of Bucharest, in 1812.

The alliance, however, of A. with the Corsican conqueror involved such an inconsistency, and was so contrary to the real interests of Russia, that a rupture and a complete change of the Russian policy were inevitable. The pressure of the continental system on the material resources of Russia, the despotic changes made by Napoleon, the augmentation of the duchy of Warsaw, the proffers of alliance by England and Sweden, awoke in A. first discontent and aversion, and soon the thought of a decisive contest against the subjugator of Europe and the disturber of the peace of the world. When this gigantic struggle at last began (1812), Russia brought into the field an army of nearly 900,000 men. During this war (see RUSSO-GERMAN WAR), A. repeatedly exposed himself to personal danger, in order to fire the courage and patriotism of his troops. His magnanimity towards France after the taking of Paris facilitated the negotiations for peace, and won for him great personal regard, amounting to a kind of enthusiasm. He was received with the same feeling in London, which he visited after the treaty of Paris, June, 1814. When he returned to St. Petersburg, his first care was to provide for the wounded and for the families of the soldiers that had fallen. The senate wished to give him the title of 'Blessed,' which, from Christian humility, he declined. After a short residence in his own capital, he went to the Congress of Vienna, where he laid claim to Poland as essential to the interests of Russia, but promised to confer on it a constitution, and, on the whole, appeared to act for the good of humanity and the freedom of nations.

In the return of Napoleon, A. saw the confusion of Europe begun again, and therefore urged the fulfilment of the treaty of Chaumont and the outlawry of the common enemy. His appearance in the French capital after the battle of Waterloo raised less enthusiasm than previously; yet on this occasion, too, France owed much to his

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generosity. It was about this time that the tendency of A. to pietism, fostered by intercourse with Madame Krüdener (q.v.), was most strongly manifested, and exercised decided influence on his political views. It was under the influence of this religiosity that he founded the Holy Alliance (q.v.), the ostensible object of which was to bring the principles of Christianity into recognition in the political arrangements of the world, but which became, in fact, a mere handle for political reaction.

In the end of Oct. 1815, A. returned to his own dominions. His policy, and the march of events, had completely changed the internal condition of Russia and her foreign relations. Her weight in European politics had become powerful; the limits of the empire had extended in all directions; and notwithstanding the war, the earlier legislative reforms had begun to act favorably on the industry and well-being of the nation. After 1805, A. had remodelled the army after the fashion of the western powers, and raised it to a condition that menaced Europe. When peace was attained, he not only sought to heal the wounds inflicted by the war, but to carry forward the work of reform formerly begun. Numerous administrative abuses were done away with, and the condition of the peasants was more and more alleviated. In 1816, the Jesuits, who were causing a great deal of disturbance, were compelled to leave St. Petersburg and Moscow, and in 1820 were sent out of the empire. On the other hand, proselytism was rigidly prohibited, and the Duchoborzes, a sect of the Russo-Greek Church, were allowed the free exercise of worship.

But however good A.'s intentions might be, his internal policy met with obstructions, partly arising from his personal views and character, partly from the nature of his position. Affected with a morbid religiosity, worn out and shaken perhaps in body and mind by the vast events in the vortex of which he had moved for the last ten years, the emperor became possessed by the dread of another European revolution; and the political struggles against reaction in Germany, and the outbreaks against despotism in Italy and Spain, appeared to him as the beginning of a new and terrible catastrophe. The attention now bestowed by A. on foreign relations threw internal improvements into the background; and the liberal reformer and pupil of Laharpe found himself involved in hopeless inconsistency, when he fully concurred in the policy of the Austrian cabinet, and, at the congresses of Troppau, Laybach, and Verona, helped to crush, together with the insurrections, the just requirements and political progress of the nations.

This complete reversal of policy could not fail of great results, especially as Russia peculiarly abounded in fermentable materials. Poland saw itself completely disappointed in its national expectations, and required the actual carrying out of the promised constitution. The contact into which the Russians had come during the war with the civilization and institutions of the western nations had excited in different classes of Russian society wishes and views by no means compatible with their condition at home. On the other

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land, there had long existed in the most influential circles an Old-Russian party, who either found their interests hurt by the enlightened measures of the emperor, or saw in them the downfall of the national church, and of the nation itself. Besides, the army was kept up on the war-footing, and in 1821 numbered about 830,000 regular troops; and this pressed severely on the people, and produced discontent, along with exhaustion and disorder of the finances. To meet this evil, A. began the planting of military colonies, which, however, met with insuperable obstacles, and did not attain the end in view. But to exorcise the spirit of political discontent and the phantom of a Russian revolution, the emperor adopted the same measures generally applied over the rest of Europe, with similar views. The censorship of the press, and a rigid guard over the importation of books, were again introduced; restrictions were put on science, literature, and education; inquiries instituted into all democratic movements; masonic lodges and missionary societies suppressed; and gradually all plans for reform and progress given up. Over all the provinces of the empire a net of police, open and secret, was spread, which interfered with the ordinary intercourse of society.

The experience that, in spite of this system of repression, public opinion could not be stifled, and that parties and individuals only expressed themselves more bitterly; the variance with his former self in which A. found himself involved; and the difficulties of governing the huge empire, which were now becoming more manifest and startling—all this tormented and embittered his morbid mind, and led him to complain of ingratitude and of a want of recognition of his good intentions. Sometimes he sought to forget his position in the dissipations of a splendid court, in which luxury and piety were strangely blended; at other times he plunged into the darkness of religious mysticism. The progress of the revolt in Greece brought the policy of the emperor into complete opposition to public opinion and the most sacred sympathies of the nation. The Russian people, restrained from all participation in political movements, were profoundly affected by the religious element of the Greek struggle; but the emperor condemned the rising as insurrection, disclaimed the favor he had formerly shown to the Greek cause, and confined himself to exhortations to the Porte to act with humanity. The death of his only and much-loved natural daughter, the terrible inundation suffered by St. Petersburg in 1824, in which he exposed himself to personal danger, and the alarm caused by a Russo-Polish conspiracy against all the members of the House of Romanow, contributed not a little to break the heart of the emperor, and completely destroy the composure of his mind. Sick in body, weary of life, and possessed by thoughts of death, he began, 1825, Sep., a journey to the Crimea, with a view to benefit the health of the empress, who was ailing, and that he himself might enjoy retirement. Leaving the empress at Taganrog, he continued his journey, but was suddenly seized by a fever peculiar to the country, and obliged to return to Taganrog. Here, in spite of all

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care, he became worse, and died. The rumor that he had been poisoned is altogether groundless. He is said to have learned, shortly before his death, the details of the conspiracy which his brother and successor, Nicholas I. (q.v.), had to begin his reign by putting down.—See Choiseul-Gouffier's *Mémoires Historiques sur l'Empereur Alexandre et la Cour de Russie* (Par. 1829); and *Alexander I.: His Life and Times*, by C. Joyneville (Lond. 1875).

ALEXANDER II., Emperor of Russia: b. 1818, Apr. 29; d. 1881, March 13; (reigned 1855–81). He was carefully educated by his father, Nicholas, who professed himself delighted with the manifestations of 'true Russian spirit' in his son. At sixteen, he was declared of age, made commandant of the Lancers of the Guard, Hetman of the Cossacks, first aide-de-camp of the emperor, and subjected daily to a life of maneuvering, reviewing, and military parade, which at last seriously injured his health. He then travelled through Germany to recruit his energies, and while there, concluded a marriage with the princess Maria, daughter of the Grand Duke of Darmstadt, 1841. He then vigorously applied himself to his duties as chancellor of the Univ. of Finland. By his dexterous and subtle manners, he insinuated himself into the affections of the Finns, and weakened their love of independence. On his accession to the throne, 1855, March 2, he found himself in a very critical position. He had two parties to conciliate—the old Muscovite party, zealous for war, and the more peaceable portion of the nation, with whom he sympathized. Throughout his reign, he had to hold the balance between conservatives and extreme radicals, but succeeded in guiding and promoting reform. The grand achievement of his reign, which was in great measure his own deed, was the emancipation of the serfs—23,000,000 souls, 1861. Reforms of the tribunals, of civil and criminal procedure, and of municipal institutions followed. In 1865, A. established elective representative assemblies in the provinces. He resisted strenuously all foreign interference with Polish affairs in 1863. There was war in Central Asia repeatedly, and the Russian dominions were much extended in that region. The czar shared the national sympathy with the Slavonic races under Turkish rule, and took the field with the army during the momentous war between Russia and Turkey in 1877–8. Latterly, he showed some tendency to reactionary measures, as in the reorganization of public education. He had been shot at by a Pole in Paris in 1867; but of late years, revolutionary discontent has been much on the increase in Russia, and persistent attempts were made to assassinate the czar, especially by members of the Nihilist Society. See **NIHILISM**. In 1879, he was shot at in his capital; in the same year, the train in which he was supposed to be travelling was blown up by an elaborate mine beneath the railway; in 1880, a violent and destructive explosion was effected by dynamite below the imperial apartments in the palace at St. Petersburg; and 1881, March 13, he was so severely injured by a bomb thrown at him as he was passing in his carriage through the street near his palace, that he died a few hours

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afterward. The empress had d. in 1880.—A. was succeeded by his son.

ALEXANDER III. (ALEXANDROVITCH), Emperor and Autocrat of All the Russias: b. 1845; proclaimed emperor, 1881, March 14 (N.S.), the day after the assassination of his father, Alexander II. His coronation was postponed till 1883, and was then celebrated with extraordinary magnificence. A. married, 1866, Nov. 9, Marie Sophie Frederica Dagmar, daughter of Christian IX., king of Denmark. Without signalizing his reign by any domestic reforms, A. has conducted the government on the plan of his father, and has suffered as he did from the threats of Nihilists, though not, up to this date (May, 1887), to the point of assassination. It is in foreign affairs that the reign of the present czar has been significant, particularly in its connection with Bulgaria (q.v.). Even more important has been the march of the power of Russia eastward into Central Asia. The building of a complete line of railway from the Caspian Sea to Merv has been prosecuted, and the Russians have pushed their outposts clear to the Afghan frontier. In fact the question of this frontier has been in dispute between the Russian and British governments since 1882, when the latter declared its understanding of the line to be from the Oxus as far as Khoja-Salee to the w., and from that point s.w. to Sarakhs, on the Persian frontier. In 1885, however, this line not having been either accepted or declined on the part of Russia, a joint commission was appointed by the two governments, which endeavored to rectify the disputed frontier. Slight conflicts occurred between the Russians and Afghans while this commission was supposedly engaged in its work, and no definite conclusion was reached, though an agreement to adhere to the military *status quo* was generally adhered to. In 1884, Sep., a meeting occurred at Skierniewice, in Russian Poland, between the emperors of Austria, Germany, and Russia, when, as has been believed, the old Triple Alliance was renewed. A similar meeting at Copenhagen in 1883, Aug., which included the czar, the kings of Greece and Denmark, and Mr. Gladstone, was also not without political significance.

ALEXANDER SEVERUS: Roman emperor (reigned 232–235); cousin, adopted son, and successor of Heliogabalus. The excellent education which he received from his mother, Julia Mammæa, rendered him one of the best princes in an age when virtue was reckoned more dangerous than vice in a monarch. He sought the society of the learned; Paulus and Ulpian were his counselors, Plato and Cicero were, next to Horace and Vergil, his favorite authors. Although a pagan, he revered the doctrines of Christianity, and often quoted that saying: ‘Whatsoever ye would that men should do to you, do ye so also to them.’ Beloved as he was by the citizens on account of his equity, he soon became an object of hatred to the unruly prætorian guards. His first expedition, against Artaxerxes, king of Persia, was happily terminated by a speedy overthrow of the enemy. But during one which he undertook against the Germans on

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the Rhine, to defend the frontiers of the empire from their incursions, an insurrection broke out among his troops, headed by Maximin, in which Alexander was murdered, with his mother, not far from Mentz. The grateful people, however, placed him among the gods. After his death, military despotism obtained the ascendancy, and the Roman power rapidly declined.

ALEXANDER THE GREAT, *äl-ëgz-än'dër*: B.C. 356-323; b. Pella; son of Philip of Macedon and Olympias, daughter of Neoptolemus of Epirus. His great natural endowments were early manifested. Philip's triumphs saddened him. On one occasion he exclaimed, 'My father will leave nothing for me to do.' His education was committed first to Leonidas, a maternal relation, then to Lysimachus, and afterwards to Aristotle. This great philosopher withdrew him to a distance from the court, and instructed him in every branch of human learning, especially in what relates to the art of government, while he disciplined and invigorated his body by gymnastic exercises. As Macedon was surrounded by dangerous neighbors, Aristotle was anxious to inspire his pupil with military ardor, and with this view recommended him to study the *Iliad*, a revision of which he himself undertook for his use. A. was 16 years of age when his father marched against Byzantium, and left the government in his hands during his absence. Two years afterwards he displayed singular courage at the battle of Chæronea, B.C. 338, where he overthrew the Sacred Band of the Thebans. 'My son,' said Philip, as he embraced him after the conflict, 'seek for thyself another kingdom, for that which I leave is too small for thee.' The father and son quarrelled, however, when the former repudiated Olympias. A. took part with his mother, and fled, to escape his father's vengeance, to Epirus; but receiving his pardon soon afterwards, he returned, and accompanied him in an expedition against the Triballi, when he saved his life on the field. Philip being appointed generalissimo of the Greeks, was preparing for a war with Persia, when he was assassinated (B.C. 336), and A., not yet 20 years of age, ascended the throne. After punishing his father's murderers, he went into the Peloponnesus, and in a general assembly of the Greeks he caused himself to be appointed to the command of the forces against Persia. On his return to Macedon he found the Illyrians and Triballi up in arms, whereupon he marched against them, forced his way through Thrace, and was everywhere victorious. But now the Thebans had been induced, by a report of his death, to take up arms, and the Athenians, stimulated by the eloquence of Demosthenes, were preparing to join them. To prevent this coalition, A. rapidly marched against Thebes, which, refusing to surrender, was conquered, and razed to the ground; 6,000 of the inhabitants were slain, and 30,000 sold into slavery; the house and family of the poet Pindar alone being spared. This severity struck terror into all Greece. The Athenians were treated with more leniency, A. only requiring of them the banishment of Charidemus, who had been most bitter in his invectives against him.

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A., having appointed Antipater his deputy in Europe, now prepared to prosecute the war with Persia. He crossed the Hellespont B.C. 334, in the spring, with 30,000 foot and 5,000 horse; attacked the Persian satraps at the river Granicus, and gained a complete victory, overthrowing the son-in-law of Darius with his own lance. The only real resistance the Macedonians met with was from the Greek auxiliaries of the Persians, who were marshalled in phalanxes, under the command of Memnon of Rhodes; but finally they all were slain, except 2,000 taken prisoners. A. celebrated the obsequies of his fallen warriors in a splendid manner, and bestowed many privileges on their relations. Most of the cities of Asia Minor, Sardis not excepted, opened their gates to the conqueror, nor did Miletus or Halicarnassus offer longer resistance. A. restored democracy in all the Greek cities, cut the Gordian-knot (q.v.) with his sword as he passed through Gordium, and proceeded to the conquest of Lycia, Ionia, Caria, Pamphylia, and Cappadocia. His career was checked for a time by a dangerous illness, brought on by bathing in the Cydnus. On this occasion he showed his magnanimity in the following circumstances. He received a letter from Parmenio, insinuating that Philip, his physician, intended to poison him, having been bribed by Darius. A. handed the letter to Philip, and at the same time swallowed the draught which had been prepared for him. As soon as he recovered, he advanced towards the defiles of Cilicia, in which Darius had stationed himself, with an army of above 500,000 men. He arrived B.C. 333, Nov., in the neighborhood of Issus, where, between the mountains and the sea, a battle was fought. The disorderly masses of the Persians were thrown into confusion by the charge of the Macedonians, and fled in terror. On the left wing, 30,000 Greeks, in the pay of the Persian king, held out longer, but they too were at length compelled to yield. All the treasures as well as the family of Darius fell into the hands of the conqueror, who treated the latter with the greatest magnanimity. The king, who fled towards the Euphrates, twice made overtures of peace, which A. haughtily refused, saying that Darius must regard him as the ruler of Asia, and the lord of all his people. One of the conditions of the second overture was that A. should possess all Asia to the Euphrates. On hearing which his general, Parmenio, exclaimed: 'I would do it, if I were A.' 'So would I,' replied the monarch, 'if I were Parmenio.' The victory at Issus opened the whole country to the Macedonians. A. now turned towards Syria and Phœnicia, to cut off Darius's escape by sea. He occupied Damascus, where he found princely treasures, and secured to himself all the cities along the shores of the Mediterranean. Tyre, confident in its strong position, resisted him, but was conquered and destroyed, after seven months of incredible exertion, B.C. 332. Thence he marched victoriously through Palestine, where all the cities submitted to him except Gaza, which shared the fate of Tyre. Egypt, weary of the Persian yoke, welcomed him as a deliverer; and, to strengthen his dominion here, he restored all the old

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customs and religious institutions of the country, and founded Alexandria in the beginning of B.C. 331, which became one of the first cities of ancient times. Thence he marched through the Libyan Desert, in order to consult the oracle of Jupiter Ammon, whose priest saluted him as a son of Jove; and at the return of spring went against Darius, who had assembled an army in Assyria. A battle ensued, B.C. 331, Oct., on the plains of Arbela, or rather Guagamela, for Arbela, the point to which A. pursued the Persians, is 50 m. from the scene of the fight. See ARBELA. Notwithstanding the immense superiority of his adversary, who had collected a new army of 500,000 men, A. was not for a moment doubtful of victory. Heading the cavalry himself, he rushed on the Persians, and put them to flight; but as soon as he had entirely dispersed them, he hastened to the assistance of his left wing, which, in the meanwhile, had been sorely pressed. He was anxious to make a prisoner of the Persian king himself, but the latter escaped by flight on horseback, leaving his baggage and all his treasures a prey to the conqueror. Babylon and Susa, the storehouses of the treasures of the East, opened their gates to the conqueror, who next marched towards Persepolis, the capital of Persia, which he entered in triumph.

The marvellous successes of A. now began to dazzle his own judgment, and to inflame his passions. He became a slave to debauchery, and his caprices were as cruel as they were ungrateful. In a fit of drunkenness, and at the instigation of Thais, an Athenian courtesan, he set fire to Persepolis, the wonder of the world, and reduced it to a heap of ashes; then, ashamed of the deed, he set out with his cavalry to pursue Darius. Learning that Bessus, the satrap of Bactriana, held the king a prisoner, he hastened his march, in the hope of saving him, but he found him mortally wounded on the frontiers of that country, B.C. 330. He mourned over his unfortunate enemy, and caused his body to be buried with all the usual rites observed in Persia; but he pursued Bessus, who himself aspired to the throne, through Hyrcania, Iran, Bactriana, over the Oxus to Sogdiana (now Bokhara), whose satrap, Spitamenes, surrendered Bessus to him. Having discovered a conspiracy in which the son of Parmenio was implicated, he put both father and son to death, though Parmenio himself was innocent of all knowledge of the affair. This cruel injustice excited universal displeasure. In 329 he penetrated to the furthest known limits of Northern Asia, and overthrew the Scythians on the banks of the Jaxartes. In the following year he subdued the whole of Sogdiana, and married Roxana, whom he had taken prisoner. She was the daughter of Oxyartes, one of the enemy's captains, and was said to be the most beautiful of the virgins of Asia. A new conspiracy broke out against A., at the head of which were Hermolaus and Callisthenes, a pupil of Aristotle, which occasioned the death of many of the culprits; while Callisthenes himself was mutilated, and carried about in an iron cage through the army, till some one put an end to his sufferings by poison.

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In the year B.C. 327, A. proceeded to the conquest of India, then known only by name. He crossed the Indus near the modern Attock, and pursued his way under the guidance of a native prince to the Hydaspes (modern Jelum), where he was opposed by Porus, another native prince, whom he overthrew after a bloody contest. Thence he marched as lord of the country through that part of India which is now called the Punjab, establishing Greek colonies. He then wished to advance to the Ganges, but the general murmuring of his troops obliged him, at the Hyphasis (modern Sutledge), to commence his retreat, which was accomplished under circumstances of extreme danger. When he had again reached the Hydaspes, he built a fleet, and sent one division of his army in it down the river, while the other followed along the banks, fighting its way through successive Indian armies. At length, having reached the ocean, he ordered Nearchus, the commander of the fleet, to sail thence to the Persian Gulf, while he himself struck inland with one division of his army, in order to return home through Gedrosia (now Beloochistan). Here he had to traverse immense deserts, where a great part of his army perished for want of food and water, and were buried in the sand. The other division marched through Arachosia and Drangiana (Afghanistan) under Craterus, but they united again in Carmania. Of all the troops, however, which had set out with A., only about a fourth part arrived with him in Persia, B.C. 325. At Susa he married Stateira, the daughter of Darius, and he bestowed presents on those Macedonians (about 10,000 in number) who had married Persian women, his design being to unite the two nations as closely as possible. He also distributed liberal rewards among his soldiers. At Opis on the Tigris he declared it to be his intention to send home the invalids richly rewarded; and this he accomplished, but not till he had with some difficulty repressed the mutiny which broke out on the occasion. Soon afterwards he was deprived, by death, of his favorite Hephæstion, on which occasion his grief was unbounded, and he interred the deceased with kingly honors. As he was returning from Ecbatana to Babylon, it is said that the Magi foretold that the latter city would prove fatal to him; but A. despised their warnings, and, in spite of the advice of his friends, marched to Babylon, before reaching which, however, he was met by ambassadors from all parts of the world—Libya, Italy, Carthage, Greece, the Scythians, Celts, and Iberians. Here he again occupied himself with gigantic plans for the future, both of conquest and civilization, when he was suddenly taken ill after a banquet, and died eleven days afterwards, B.C. 323, May (or June) 11 (or 13), in the 32d year of his age, having reigned twelve years and eight months. His body was deposited in a golden coffin at Alexandria, by Ptolemæus, and divine honors were paid to him, not only in Egypt, but in other countries. A. had appointed no heir to his immense dominions; but to the question of his friends: 'Who should inherit them?' he replied: 'The most worthy.' After many disturbances, his generals recognized as kings the weak.

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mindcd Aridæus—a son of Philip by Philinna, the dancer—and A.'s posthumous son by Roxana, while they shared the provinces among themselves, under the name of satraps. Perdiccas, to whom A. had, on his death-bed, delivered his ring, became guardian of the kings during their minority.

It is but right to observe that A. did something besides shedding blood during his life. He diffused the language and civilization of Greece wherever victory led him, and planted Greek kingdoms in Asia, which continued to exist for some centuries. At the very time of his death he was engaged in devising plans for the drainage of the unhealthy marshes around Babylon, and a better irrigation of the extensive plains. It is even supposed that the fever which he caught there, rather than his famous drinking-bout, was the real cause of his death. To A., the ancient world owed a vast increase of its knowledge in geography, natural history, etc. He taught Europeans the road to India, and gave them the first glimpses of that magnificence and splendor which has dazzled and captivated their imagination for two thousand years.

ALEXANDER OF HALES (in Latin, Alexander Halensis): d. 1245: a famous theologian, known as the 'Irrefragable Doctor.' He was originally an ecclesiastic in Gloucestershire, but had attended the schools of Paris, got the degree of doctor, and had become a noted professor of philosophy and theology there, when (1222) he suddenly entered the order of the Minorite Friars. From that time, he lived the life of a studious recluse. His chief and only authentic work is the *Summa Universa Theologiæ* (best ed., Venice, 1576, 4 vols.), written at the command of Pope Innocent IV., and enjoined by his successor, Alexander IV., to be used by all professors and students of theology in Christendom. A. gave the doctrines of the church a more rigorously syllogistic form than they had previously had, and may thus be considered as the author of the scholastic theology. Instead of appealing to tradition and authority, he deduces with great subtlety, from assumed premises, the most startling doctrines of Catholicism, especially in favor of the prerogatives of the papacy. He refuses any toleration to heretics, and would have them deprived of all property; he absolves subjects from all obligation to obey a prince that is not obedient to the church. The spiritual power which blesses and consecrates kings, is by that very fact, above all temporal powers, to say nothing of the essential dignity of its nature. It has the right to appoint and to judge these powers, while the pope has no judge but God. In ecclesiastical affairs, also, he maintains the pope's authority to be full, absolute, and superior to all laws and customs. The points on which A. exercises his dialectics are sometimes ludicrous; as when he discusses the question, whether a mouse that should nibble a consecrated wafer would thereby eat the body of Christ. He arrives at the conclusion that it would.

ALEXANDER NEWSKI or **NEVSKI**, *nev'ske*: 1219-63; b. Vladimir: Russian hero and saint, son of the Grand Duke Jaroslav, of Novgorod. In order to defend the empire,

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which was attacked on all sides, but especially by the Mongols, his father quitted Novgorod, leaving the cares of the government to his sons Fedor and Alexander, the former of whom died soon afterwards. The latter vigorously resisted the enemy; yet Russia was forced to submit to the Mongol dominion, 1238. A. now fought to defend the w. frontier against the Danes, the Swedes, and the Teutonic knights. He received the surname of Newski, on account of the splendid victory over the Swedes, which he achieved in 1240, on the Nēwa (Neva), in the province where St. Petersburg now stands. In 1243, on the ice of Lake Peipus, he defeated the Livonian Knights of the Sword, who had been stimulated by the pope to attack the Russian heretics. At the death of his father in 1247 he became Grand Duke of Vladimir. Pope Innocent IV. now made a diplomatic attempt to reunite the Greek and Roman churches, since his military scheme had failed, and with this view sent an embassy to A., which, however, proved as ineffectual as the former. To the end of his life, however, he remained a vassal of the Tatars or Mongols. Thrice had he to renew his oath of fealty to the Asiatic barbarians, making in each instance a journey to their camp. He d. at Kassimcow, on his return from the last of these journeys; and the gratitude of the nation perpetuated his memory in popular songs, and even canonized him. Peter the Great honored his memory by building a magnificent convent on the spot where A. had fought his great battle, and by founding the knightly order of A. N.

ALEXANDERS, *āl-ēgz-ān'dērz* (*Smyrniūm olusatrum*): biennial plant of the natural order *Umbelliferae* (q.v.), found in waste ground, near ruins, etc., in Britain and the south of Europe. The stem is 3-4 ft. high, very stout and furrowed; the leaves twice or thrice ternate, stalked, serrate, of a bright, yellowish-green color; the leaflets very large. The flowers are yellowish-green in very dense, numerous rounded umbels, destitute of involucre; the fruit almost black. The plant has an aromatic taste, strong and pungent, but becomes rather pleasant when blanched, and was formerly much cultivated and used in the same way as celery, although at present it is little regarded. The frequency of its occurrence near ruins in Britain may probably be referred to its former cultivation. The fruit is carminative. *S. perfoliatum*, a native of Italy, with the upper stem-leaves embracing the stem, is used in the same way. The genus *Smyrniūm* contains only a few known species, chiefly natives of the temperate parts of the N. hemisphere. It has compound umbels; the involucre variable; the calyx obsolete; the petals inflected at the point; the fruit consisting of two nearly globose carpels, each with three sharp dorsal ribs; the lateral ones obsolete; several vittæ in the interstices; the albumen involute.

ALEXANDRI, or **ALEKSANDRI**, **VASILIO** (Basil): b. Jassy, the chief city of Moldavia, 1821: Rouman poet and littérateur. His family was of Venetian origin. He studied at the Univ. of Paris, taking the degree of Bachelor of Letters,

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and returned to Jassy, 1839, where he became the associate of a band of young men educated in France, who, besides being ambitious of literary distinction, were zealous for political equality and for Rouman nationality and independence. Soon after his return A. made his *début* in literature by contributing a story, *The Flower Girl of Florence*, to a periodical conducted by the young reformers. He became a frequent contributor to this periodical, which was soon suppressed by order of Prince Stourdza. In 1842, he appeared as a poet, publishing several pieces, most of them strongly tinged with national feeling. At this time he began to write the songs and ballads upon which his chief claim to literary reputation at present rests. In 1844, he suddenly attained an almost unbounded local popularity as a play-writer. Having become concerned in the management of two theatres at Jassy, the one French, the other Moldavian, he produced a series of pieces, some in French, others in Rouman, which, though mostly slight and hasty performances, had merit enough to excite the enthusiasm of his countrymen: *Georges de Sadagoura*, *Jassy en Carnival*, *La Pierre de la Maison*, *La Noce Villageoise*, are the titles of the most important. A new literary and scientific periodical which, 1844, he set on foot, in conjunction with Cogalniceano and Prince John Ghika, was suppressed by the government, after a career of nine months.

A. was engaged in the revolutionary movement at Jassy in the year of revolutions, 1848, and on its failure, betook himself for a time to Paris. When the Russian war had given Moldavia and Wallachia their virtual emancipation from the yoke of Turkey, the union of the two principalities was carried by the resolution of their inhabitants, with the support of France, in spite of political obstacles that seemed almost insurmountable; and A. did not a little to inspire the resolution of his countrymen. A song which he wrote at the critical moment in 1856, *The Hour of Union*, became exceedingly popular, and by its stirring appeals to the feeling of Rouman nationality, helped to allay the jealousies which divided the two principalities. A. was prominent in all the political transactions which culminated in this result. Two years earlier, when the death of his father had put him into possession of the family estate, he had emancipated the serfs who lived upon it; and this example found so many imitators that the government found itself almost immediately compelled to decree a general measure of enfranchisement.

A.'s *Popular Ballads of Roumania*, which he had begun to compose in 1842, appeared at Jassy in two parts, in 1852 and 1853. One of the parts, translated into French by himself, was afterwards published at Paris under the title of *Ballades et Chantes Populaires de la Roumanie*. His collected dramatic works were pub. at Jassy, 1852. Another vol. of poems appeared at Paris, 1853; and of this vol. a French translation, with the title *Les Doïnas, Poesies Moldaves*, was soon afterwards produced by M. Vanesco. *Le Collier Littéraire*, a miscellaneous collection of prose and verse, he published in 1857.

ALEXANDRIA.

ALEXANDRIA: city, cap. of Alexandria co., Va., and a port of entry; beautifully situated on the right bank of the Potomac river, seven m. below Washington. Here the river is a mile in width, forming a fine harbor for the largest vessels, and there is a considerable and growing foreign trade. The city is well laid out, with well paved streets, a horse railway, and a railroad connection with Washington; the Chesapeake and Ohio canal also begins here, and connection is made with the Virginia Central r.r. It is lighted by gas, supplied with water, has a steam fire department, and a handsome public market, a court-house, 15 churches, 4 banks and 29 school rooms. The industries of A include machine shops, flouring mills, plaster mills, and an extensive cotton factory. There are several important private institutions of learning, and a large library. A considerable coal trade reaches A. from the Cumberland region, and large shipments of coal are made to eastern parts. The number of vessels registered in 1880 was 98, having a tonnage of 4,359. The number of vessels entering the port for 1886 was, foreign 11, coastwise 152; the number clearing—foreign 14, coastwise 139; the value of exports was \$87,930. Pop. (1870), 13,570; (1880) 13,659.

ALEXANDRIA, *āl-īgz-ān'drī-ā*: town of Dumbarton-shire, Scotland, on the w. bank of the Leven, opposite to Bonhill, three m. from Dumbarton, on the Glasgow, Dumbarton, and Vale of Leven railway. It is a town of recent growth, of neat and pleasing appearance, in the midst of beautiful scenery. It has extensive cotton-printing works, and other public works. Pop. (1871) 4,650; (1881) 6,173.

ALEXANDRIA, *āl-īgz-ān'drī-ā* (called Skanderi'eh by the Turks and Arabs): founded by Alexander the Great in the autumn B.C. 332. It was situated originally on the low tract of land which separates the lake Mareotis from the Mediterranean, about 14 m. w. of the Canopic mouth of the Nile. Before the city, in the Mediterranean, lay the island of Pharos, upon the n. e. point of which stood the famous light-house (Pharos) and which was connected with the mainland by a mole, called, from its length, the Heptastadium, or 'Seven-Furlong' mole, thus forming the two harbors. The plan of A. was designed by the architect Dinocrates, and its original extent is said to have been about 4 miles in length, with a circumference of 15 m. It was intersected by two straight main streets, crossing each other at right angles in the middle of the city. Colonnades adorned the whole length of these streets, which were in general very regularly built. The most magnificent quarter of the city was that called the Bruchium, which was situated on the eastern harbor. This quarter of the city contained the palaces of the Ptolemies, with the Museum and the old library; the Soma or mausoleum of Alexander the Great and of the Ptolemies, the Poseidonum, and the great theatre. Further w. was the emporium or exchange. The Serapeion, or temple of Serapis, stood in the western division of the city, which formed the Egyptian quarter, and was called Rhacōtis; a small town of that name had occupied the site

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before the foundation of A. To the w. of the city lay the great Necropolis, and to the e. the race-course, beyond which was the suburb Nicopolis. The greater part of the space under the houses was occupied by vaulted subterranean cisterns, capable of containing a sufficient quantity of water to supply the city for a year. From the time of its foundation, A. was the Greek cap. of Egypt. Its pop. in its prosperity, is said by Diodorus to have amounted to about 300,000 free citizens, which would involve more than an equal number of slaves and strangers. This population consisted mostly of Greeks, Jews, and Egyptians, together with settlers from all nations of the known world. After the death of Alexander the Great, A. became the residence of the Ptolemies. They made it, next to Rome and Antioch, the most magnificent city of antiquity, as well as the chief seat of Grecian learning and literature, which spread hence over the greater part of the ancient world. The situation of the city, at the point of junction between the East and West, rendered it the centre of the commerce of the world, and raised it to the highest prosperity.

A. had reached its greatest splendor when it came into the possession of the Romans, about B.C. 30. From that time its prosperity began to decline—at first almost imperceptibly, afterwards more rapidly, in consequence of the removal of the works of art to Rome, the massacres of Caracalla, the laying waste of the Bruchesium by Aurelian, the siege and pillage of the city by Diocletian, and, lastly, the rising prosperity of the rival city of Constantinople. All these causes combined to destroy A. so speedily, that, in the 4th c. no building of any importance was left in it except the temple of Serapis. The strife between Christianity and heathenism gave rise to bloody contests in A. The Serapeion, the last seat of heathen theology and learning, was stormed by the Christians, A.D. 389, and converted into a Christian church. This put an end to heathenism, and A. became henceforward a chief seat of Christian theology, and continued so till it was taken by the Arabs, under Amru, in June, 638. This siege, and still more, its conquest by the Turks in 868, completed the destruction of the city. It revived, indeed, in some degree under the Egyptian caliphs, and continued during the middle ages to be the most important emporium of trade between the East and West; but the discovery of America, and of the passage to India by the Cape of Good Hope, very much diminished the trade of A.; and the dominion of the Mamelukes, and the conquest of the Osmanli, annihilated even the little which the Arabs had restored. The result was, that in 1778 A. contained no more than 6,000 inhabitants. After the conquest of Egypt by the French in the end of the 18th c., A. began to revive; and under Mehemet Ali, who resided in it a part of every year, it prospered to such a degree that it may now be reckoned one of the most important commercial places on the Mediterranean. The Suez canal diverted part of its trade as the centre of steam communication with India; but this was more than compensated by the general impetus given by the canal to Egyptian prosperity.

ALEXANDRIAN CODEX.

The present city is not situated exactly on the site of the old one, but is built chiefly on the mole called the Heptastadium, which has been increased by alluvial deposits till it has become a broad neck of land between the harbors, of which the eastern is called the New Port, and the western the Old Port. A. is connected with Cairo by rail (continued to Suez) and by the canal of Mahmoudieh. Originally dirty and ill built, it has some handsome streets and buildings; but the best streets were ruined in 1882. The recent growth of A. has been extraordinary. Pop. (1825), 16,000; (1840), 60,000; (1870), 238,888; (1883), 208,755, of whom 60,000 are Europeans. Value of exports from A. in 1881, £13,684,630 (mostly cotton and cotton seed, two-thirds going to Great Britain); of imports, £7,110,168 (half from Britain). Of the few remaining objects of antiquity the most prominent is Pompey's Pillar (q.v.) as it is erroneously called. Of the so-called Cleopatra's Needles—two obelisks of the time of King Thothmes III., who lived B.C. 16th c.—one was brought to England and erected on the Thames Embankment, 1878; and the other, presented by the Khedive to the United States, was set up in Central Park, New York, 1881. Other antiquities of A. are some catacombs, and underground cisterns almost entirely filled up. In 1882 an English fleet bombarded the forts of A.; the town was thereafter sacked and plundered by the connivance of the native military usurper and his party, and great part of it destroyed by fire. See ALEXANDRIAN LIBRARY.

ALEXANDRIAN CODEX, *kō'dīks*: an important manuscript of the Christian Scriptures in Greek, now in the British Museum. It is written on parchment, in finely formed uncial letters, and is without accents, marks of aspiration, or spaces between the words. Its probable date is the latter half of the 6th c. With the exception of a few gaps, it contains the whole Bible in Greek (the Old Test. being in the translation of the Septuagint), with the epistles of Clemens Romanus. For purposes of biblical criticism, the text of the Epistles of the New Test. is the most valuable part; for with respect to the Gospels, it is clear that the original text which the copyist had before him must have been far inferior. This celebrated manuscript belonged, as early as 1098, to the library of the patriarch of Alexandria. In 1628 it was sent as a present to Charles I. of England by Cyrilus Lucaris, patriarch of Constantinople, who declared that he had got it from Egypt; and that it was written there appears from internal and external evidence. Grabe made this manuscript the foundation of his edition of the Septuagint (4 vols., Oxf. 1717-20). Fac-similes have been published, of the New Test., by Woide (Lond. 1786), and by Cowper (Lond. 1860); of the Old Test., by Baber (Lond. 1816).

ALEXANDRIAN LIBRARY: a remarkable collection of books, the largest of the ancient world, founded by Ptolemy Soter, in the city of Alexandria, Egypt. Even in the time of its first manager, Demetrius Phalereus, a banished Athenian, the number of vols. or rolls already amounted to 50,000; and during its most flourishing period, under the

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direction of Zenodotus, Aristarchus of Byzantium, Apollonius Rhodius, and others, is said to have contained 400,000, or, according to another authority, 700,000. The greater part of this library, which embraced the collected literature of Rome, Greece, India, and Egypt, was contained in the Museum, in the quarter of Alexandria called Brucheium. During the siege of Alexandria by Julius Cæsar, this part of the library was destroyed by fire; but was afterwards replaced by the collection of Pergamos, presented to Queen Cleopatra by Mark Antony, to the great annoyance of the educated Romans. The other part of the library was kept in the Serapeion, the temple of Jupiter Serapis, where it remained till the time of Theodosius the Great. When this emperor permitted all the heathen temples in the Roman empire to be destroyed, the magnificent temple of Jupiter Serapis was not spared. A mob of fanatic Christians, led on by the abp. Theophilus, stormed and destroyed the temple, together, it is most likely, with the greater part of its literary treasures, 391 A.D. It was at this time that the destruction of the library was begun, and not at the taking of Alexandria by the Arabians, under the caliph Omar. The story, at least, is ridiculously exaggerated which relates that the Arabs found a sufficient number of books remaining to heat the baths of the city for six months. The historian Orosius, who visited the place after the destruction of the temple by the Christians, relates that he then saw only the empty shelves of the library. See Petit-Radel, *Recherches* (Paris, 1819); Ritschl, *Die Alexandrinischen Bibliotheken* (Berlin, 1838); and works by Weniger (1875), and others.

ALEXANDRINE, a. *āl'ēgz-ān'ārīn* [city of *Alexandria*, n. Africa—named after Alexander the Great]: denoting a verse of twelve syllables. **AL'EXAN'DRIAN**, a. *-ārī-ān*, of or pertaining to Alexandria in Egypt, or to a school of philosophy which flourished there in the early Christian centuries.

ALEXAN'DRINE or **ALEXANDRIAN AGE**: a period of history, when after liberty and intellectual cultivation had declined in Greece, Alexandria in Egypt became the home and centre of science and literature. The A. A. may be divided into two periods: the first including the reigns of the Ptolemies, B.C. 323 to 30; the second, B.C. 30 to A.D. 640, or from the fall of the Ptolemæan dynasty to the irruption of the Arabs.

Ptolemæus Soter, the first ruler who introduced and patronized Greek science and literature in Alexandria, was followed by that yet more munificent patron, Ptolemæus Philadelphus, who regularly established the celebrated Alexandrian Library and Museum, which probably had been begun by his father. This Museum contained porticos, a lecture-room, and a large hall, in which the learned men—the professors and fellows, as they might be called—dined together. The Alexandrine school consisted of Egyptians, Greeks, Jews, and latterly, Romans. The grammarians and poets made the greatest figure. The grammarians were both philologists and *littérateurs*, who

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explained things as well as words, and were thus a kind of encyclopedists. Among these rank Zenodotus of Ephesus, Eratosthenes of Cyrene, Aristophanes of Byzantium, Aristarchus of Samothrace, Crates of Mallus, Dionysius the Thracian, Apollonius, the Sophist, and Zollus. Their chief service consists in having collected the writings then existing, prepared corrected texts, and preserved them for future generations. The most noted of the poets of the Alexandrine school were Apollonius Rhodius, Lycophron, Aratus, Nicander, Euphorion, Callimachus, Theocritus, Dionysius, and the seven tragedians called the Alexandrine Pleiades.

The Alexandrine school had a spirit and character altogether different from the previous intellectual life of Greece. From the attention paid to the study of language, it was natural that correctness, purity, and elegance of expression should become especially cultivated; and in these respects many of the Alexandrine writers are distinguished. But what no study and no efforts could give—the spirit that animated the earlier Greek poetry was, in most of these works, wanting. In place of it, there was displayed greater art in composition; what had formerly been done by genius, was now to be done by the rules furnished by criticism. Only a few show real genius; the works of the rest, faultless according to rule, are destitute of life and soul. In a school where imitation and rule thus took the place of inspiration, each generation of disciples became more artificial and lifeless than their masters. Criticism degenerated into frivolous fault-finding, and both prose and poetry became labored affectation.

The ALEXANDRINE PHILOSOPHY is characterized by a blending of the philosophies of the East and of the West, and by a general tendency to *eclecticism*, as it is called, or an endeavor to reconcile conflicting systems of speculation, by bringing together what seemed true in each. Not that the Alexandrine philosophers were without their sects; the most famous of which were the Neo-Platonists (q.v.). Uniting the religious notions of the East with Greek dialectics, they represent the struggle of ancient civilization with Christianity; and thus their system was not without influence on the form that Christian dogmas took in Egypt. The amalgamation of eastern ideas with Christian gave rise to the system of the Gnostics (q.v.), which was elaborated chiefly in Alexandria.—The Alexandrine school was no less distinguished for the culture of the mathematical and physical sciences, which here reached a greater height than anywhere else in ancient times. As early as B.C. 3d c., Euclid had here written his great work on geometry. The astronomers of the A. school were distinguished from all their predecessors by their setting aside all metaphysical speculation, and devoting themselves to strict observation. Among the distinguished physicists and mathematicians of the A. school, were Archimedes, Eratosthenes, Aristarchus of Samos, Ptolemæus, etc. For about four centuries, the Alexandrine school was the centre of learning and science in the ancient world. See

ALEXANDRINES—ALEXEI MICHAILOWITCH.

Vacherot, *Histoire critique de l'école d'Alexandrie* (3 vols., Paris, 1846-51).

ALEXAN'DRINES: rhyming verses consisting each of twelve syllables or six measures. The name is most probably derived from an old French poem on Alexander the Great, belonging to the 12th or 13th c., in which this measure was first used; according to others, it was so called from the name of one of the authors of that poem being Alexander. The Alexandrine has become the regular epic or heroic verse of the French, among whom each line is divided into two hemistichs, the sixth syllable always ending a word. In English, this rule is not always observed, as in the following verse from Spenser:

That all the woods shall an|swer, and their echo ring.

The only considerable English poem wholly written in A. is Drayton's *Polyolbion*; but the Spenserian stanza regularly ends in an Alexandrine, and the measure occurs occasionally in our common heroic verse, as the last line of a couplet:

When both are full, they feed our blest abode,
Like those that watered once|the paradise of God.—*Dryden*.

ALEXANDROVSK *â-lěks-ân-drovsk'*: town in the s. of Russia, cap. of the dist. of the same name; on the left bank of the Dnieper, below the cataracts. It is 48 m. s. of Ekaterinoslav, is fortified, and has considerable trade. Inland productions are shipped here for the Black Sea. Pop. (1880) 4,507.—There are various other towns and districts of the same name in Russia; the most important of which is that in the government of Vladimir, in the centre of the empire. It was a favorite summer residence of the czar Ivan Vasilievitch, who introduced there the first printing-press known in Russia. It has a magnificent imperial *stud*, commenced by the empress Elizabeth in 1761, and completed about twenty years after. Pop. (1880) 6,779.

ALEXEI MICHAILOWITCH, *â-lěk-sâ'e me-ki'lo-vitch*, second Russian czar of the House of Romanow: b. 1629, March 10; d. 1676, Jan. 29: succeeded his father, Michael Fedorowitch, 1645. The young czar A. yielded himself to the control of his chancellor, Plessow, and his tutor, Morosow, and the avarice of these bad advisers caused an insurrection in 1648, in which Plessow lost his life. Popular discontent favored the plans of two pretenders to the throne—Demetrius III. (q.v.) and Ankudinow. The latter, professing to be a son of the czar Wasili Shuiskoi, was put to death at Moscow in 1653. A. possessed good qualities, which appeared in his riper years. In his two campaigns against the Poles, 1654-56 and 1660-67, he took Smolensko, conquered and devastated almost the whole of Lithuania, and even secured for himself the possession of several provinces. He also gained a part of the Ukraine; and though his war with Sweden (1656-58) was unfortunate, he lost nothing by the following peace. A. conferred great benefits on his countrymen by the introduction of various important reforms into the Russian laws; he ordered translations of numerous sci-

ALEXEI PETROWITCH—ALEXIUS COMNENUS.

entific works, chiefly of a military nature, into Russian; and even ventured on some ecclesiastical changes. In his private character, he was amiable, temperate, and pious. His second wife, the beautiful Natalia Narischkin, was the mother of Peter the Great.

ALEXEI PETROWITCH, *pā-tro'vitch*: 1690–1718; b. Moscow; eldest son of Peter the Great of Russia. Having shown himself opposed to the reforms and innovations made by the emperor, he was excluded by Peter from the line of succession to the throne. With this decision he appeared to be satisfied, and declared his intention of spending the remainder of his days in a monastery. But when Peter the Great undertook his second tour in Northern Europe, A., under the pretense of following the czar, escaped in 1717 to Vienna, and thence went to Naples. He was induced to return to Russia, where, by the ukase of 1718, Feb. 2, he was disinherited, and an investigation was ordered to detect all parties concerned in his recent flight from Russia. His mother, Eudoxia, with Marie Alexiewna, step-sister to the czar, and several other eminent persons, were made prisoners, and either put to death or otherwise punished. A. was condemned to death, but soon afterward received a pardon. However, the terror and agitation of the trial so affected his health that he died 1718, June 26. The czar, to avoid scandal, ordered the trial to be published. Other accounts assert that A. was beheaded in prison. By his wife, Charlotte Christine Sophie, princess of Brunswick-Wolfenbüttel, A. left a son, who, as Peter II., was elevated to the throne.

ALEXIPHARMIC, a. *ā-lēks'ī-fār'mik* [Gr. *alexo*, I keep off; *pharmakon*, poison]: having the effect of expelling poison or infection by sweat. N. the medicine that expels poison. **ALEXITERIC**, a. *ā-lēks'ī-tēr'ik* [mid. L. *alexiteria*, a medicine which only mitigates disease: Gr. *alexo*; *deletērion*, poison]: resisting poison: N. the medicine which does so.

ALEXIS: see **ALEXEI**.

ALEXIUS COMNENUS, *al-eks'ī-us com-ne'nus*: one of the ablest rulers of the Byzantine empire; 1048–1118; b. Constantinople; third son of Johannes Comnenus, the bro. of the emperor, Isaac Comnenus. The family came originally from Italy, and settled in Asia Minor. His father having refused the purple on the abdication of Isaac, it was given to one Ducas, the son of a distinguished general. A. in his youth gave brilliant promise of the vigorous military genius which he afterwards manifested; and at length, after a series of anarchic reigns of brief duration, his soldiers succeeded in elevating him to the throne, while the old and feeble Nicephorus Botaniates, his predecessor, was compelled to retire to a monastery. Gibbon graphically paints the position and achievements of A. in the 48th chap. of his *Decline and Fall of the Roman Empire*. Everywhere he was encompassed with foes. The Scythians and Turks were pouring down from the north and northeast; the fierce Normans, who had violently effected a lodgment in Sicily and Italy, were men-

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acing his western provinces; and, finally, the myriad warriors of the first crusade had burst into his empire on their way to Palestine, and had encamped around the gates of his capital. Yet he contrived to avoid all perils and disgraces by the wisdom of his policy, the mingled patience and promptitude of his character, his discipline in the camp, and his humanity on the throne. He reigned for 37 years; and if it had been possible to preserve the weak and corrupt Byzantine empire in its integrity, a ruler like A. might have done it. He could only delay its inevitable destruction. Undoubtedly, the great interest which attaches to A. arises from his relation to the crusaders. Historians differ as to the purity and sincerity of his conduct towards them. His daughter Anna, who wrote his life, defends his 'policy' with filial piety: but it seems clear that he entertained a profound dread and suspicion of the half-civilized Franks, and, knowing the weakness of his own empire, was compelled to dissimulate. He certainly promised them help, and persuaded them to go off into Asia; it is equally certain that he did not fulfil his promises, and that he simply used them as instruments to reconquer from the Turks the islands and coasts of Asia Minor. Perhaps, however, little apology is needed for a monarch who 'subdued the envy of his equals, restored the laws of public and private order, caused the arts of wealth and science to be cultivated, and transmitted the sceptre to his children of the third and fourth generation.'

ALFIERI, *âl fe-â'rê*: VITTORIO, Count: 1749-1803; b. Asti, Piedmont; modern Italian dramatic poet. He received a very defective education in his father's house, and was then sent to the academy of Turin, which he quitted as ignorant as he had entered it, to join a provincial regiment. After a hurried tour through Europe, he returned to Turin in 1772. He then left the military service, and renouncing idleness and unworthy amours, devoted himself to literary occupation. The applause which his first attempts received encouraged him in his determination to win fame as a dramatic author. But as he clearly saw the deficiencies of his education, he began at a mature age to learn Latin, and also to study the Tuscan dialect, for which purpose he went to Tuscany. On his journey thither, A. made the acquaintance of the Countess of Albany (q. v.), to whom he became deeply attached. To render himself worthy of her esteem, he strove with unremitting earnestness after poetic excellence; and in order to be perfectly free and independent of all other cares, he transferred his whole property to his sister, in exchange for an annuity. A. now lived alternately in Florence and in Rome. Afterwards, when his friend the countess was released from other ties by the death of her husband, they lived together in the closest intimacy in Alsace or in Paris, where A. was incessantly occupied in writing, revising, and publishing his works. There appears to have been a marriage, although it was never made public. On the first outburst of the French Revolution, A. went to England, but soon returned to Paris. In 1792, he was again forced to flee from France, and he then settled with his inseparable com-

ALFONSINE—ALFONSO.

panion in Florence, where he died. The ashes of A. and those of his friend repose in the church of Santa Croce, in Florence, under a beautiful monument by Canova, between the tombs of Michael Angelo and Macchiavelli. As a dramatic author, A. attempted three different departments. He published 21 tragedies, 6 comedies, and 1 'tramelogedia,' a name invented by himself. His dramatic works show a want of fresh imaginative vigor, and betray the laborious perseverance with which he did violence both to himself and to art. A. was inspired more by politics than by poetry. He wished to breathe a spirit of freedom into the dormant minds of his countrymen, and considered the theatre as a school in which the people might learn to be 'free, strong, and noble.' In order to preserve the purity of his muse, A. had resolved to read no other poet. He wished to produce an effect by the very simplest means, and, renouncing the aid of ornament, to please by manly strength and earnestness alone. His works are on this account cold and stiff, his plots simple even to poverty, his verse hard and unpleasing, and his language destitute of that magic splendor of coloring which stirs the inmost soul. Notwithstanding this, A. did good service to Italian tragedy. He corrected the effeminate taste which had before prevailed, as well as the pedantic imitation of Attic models. Succeeding writers endeavored to imitate his strength and simplicity. A. was more unsuccessful in his comedies than in his tragedies. They manifest the same serious political tendency; the invention is poor, the development of the plot uninteresting, and the characters are only general sketches, without individuality. The most successful of his dramatic works is *Abel*, a mixture of tragedy and opera, invented by himself, which he designated by the singular name 'tramelogedia.' Besides dramatic works, A. left an epic poem, in four cantos, also many lyrical poems, 16 satires; also poetical translations of Terence, Vergil, and portions of Æschylus, Sophocles, Euripides, and Aristophanes. After his death, appeared his *Misogallo*, a memorial of his hatred to the French. The Countess of Albany caused a collected edition of his works to be published (35 vols. 4to, Pisa, 1805-1815), containing his autobiography; Centofanti published a life in 1842, and Teza in 1861.

ALFONSINE, *äl-fön-sē'nā*: town of Italy, province of Ravenna, nearly 4 m. n.w. from Ravenna, in a level, irrigated, and fertile district. Pop. 4,000.

ALFONSINE TABLES: see **ALFONSO X.**

ALFONSO, *äl-fön'so*, I: earliest King of Portugal: 1110-85; son of Henry of Burgundy, conqueror and Count of Portugal. At his father's death he was only two years of age, and the management of affairs fell into the hands of his ambitious and dissolute mother, Theresa of Castile, from whom he was compelled forcibly to seize it, on attaining his majority. He then entered on a war with Castile, whose supremacy he did not recognize, and leaguely himself with Navarre, made several conquests in Galicia, after which he proceeded to attack the Moors, whose invasions he had

ALFONSO VI.—ALFONSO III.

already begun to check by building the fortress of Leiria. A battle was fought in the plains of Ourique, 1139, July 25, when victory declared for the Portuguese, after a bloody struggle, in which, it is said, not less than 200,000 Moors perished. From that day A. assumed the title of king, which the pope confirmed. He took Lisbon, by the help of the English fleet of crusaders, 1147, Oct. 25; and in 1158, after a siege of two months, made himself master of Alcazar-de-Sal and Evora. In 1171 he took by assault the fortress of Santarem from the Saracens, and annihilated the garrison; and at the same place he defeated the Almohadian ruler, Jusuf-ben-Jakub, in 1184. He invited to his land the Knights-Templars and Knights of St. John, and established the orders of Avis and of St. Michael. The Portuguese style him *El Conquistador* (the Conqueror). But he was also a legislator, establishing the Cortes of Lamego, and promulgating a code of laws relating to the order of succession, the privileges of the nobility, the administration of justice, etc. He died at Coimbra, Dec. 6, 1185.

ALFONSO VI., King of Portugal (reigned 1662–83): second son of John IV. He was at first expected to enter the service of the church, but the death of his elder brother in 1656 altogether changed his plans. Being then a minor, the government of the kingdom was intrusted to his mother, Louisa de Guzman, a woman of great wisdom and prudence, who felt it her duty to retain the power in her own hands, even after A. had reached his majority, for the sickly and dissolute prince displayed little aptitude for business. But the court minions, who had their own reasons for wishing him to rule, urged him to remove his mother from her office. This was accomplished in 1662. The minister, Count Castel-Melhor, a mere trifler, possessed supreme authority. Nevertheless, Portugal was victorious in the war against Spain, although for this she had to thank her English and French allies. In 1666, A. married Maria-Francisca-Elizabeth of Savoy, who, however, soon conspired with his brother Pedro against him. The plot succeeded. A. was seized and imprisoned at Cintra, where he died 1683, Sep. 12. Pedro then obtained the throne, and married the widow of his brother.

ALFONSO III., surnamed THE GREAT, King of Leon, Asturias, and Galicia: 848–910: succeeded his father, Ordoño I., 866, but had to maintain his rights by force of arms against Count Froila, who had usurped the throne. Having caused the latter to be murdered, he proceeded sternly to reduce to obedience the powerful nobility of the kingdom, who looked with a jealous eye on the monarchy remaining in one family; and then, carrying his arms against other enemies, he fought through more than 30 campaigns, and gained numerous victories over the Moors. He crossed the Douro, broke down the walls of Coimbra, penetrated to the Tagus and Estremadura, enlarged his territories by a portion of Portugal and Old Castile, and re-peopled the conquered and desolated Burgos. But these wars entailed great expense and misery on the nation. In 888, A. had to

ALFONSO V.—ALFONSO X.

endure the pain of beholding at the head of a rebel army his own son Garcias, who wished to seize the crown, although pretending a simple desire for the prosperity of the commonwealth. A. collected his forces, conquered his son, and threw him into prison. But Garcias' mother, by the help of several of the *grandees*, excited a new conspiracy, which resulted in the abdication of the monarch in favor of his imprisoned son. In order, however, to be still useful to his country, A. became commander of Garcias' forces in an expedition against the Moors. After returning in triumph, he died at Zamora.

ALFONSO V., King of Aragon, Naples, and Sicily: (reigned 1416-58) d. 1458: received the surname of 'the Magnanimous,' because on his accession to the throne he destroyed a document containing the names of all the *grandees* who were hostile to him. His historical importance arises from his having brought Southern Italy under the dominion of Aragon. In 1420 he attacked Corsica, but speedily hastened to Naples at the request of Queen Joanna II., who besought his assistance against Louis of Anjou. For some time he enjoyed the highest favor; but, in 1423, having thrown into prison her minion Caraccioli, who was his enemy, the queen declared for his rival, Louis. At her death, 1435, A. resolved to claim the kingdom; but René of Anjou, whom Joanna had appointed her successor after the death of Louis, opposed him. Rome and Genoa sided with René, and the Genoese fleet attacked and defeated that of A., the monarch himself being taken prisoner. He was sent to Duke Philip of Milan, who, charmed by his manner and talent, set him at liberty, and even formed an alliance with him. After several battles and a long mountain-war in the Abruzzi, A. overthrew his adversary, and entered Naples in triumph. Having once firmly established his power, he proceeded to suppress the disorders which had sprung up during the worthless reign of Joanna, and honorably distinguished himself by his patronage of letters. He died at Naples while his troops were besieging Genoa, 1458, June, 27.

ALFONSO X., surnamed 'the Astronomer,' 'the Philosopher,' or 'the Wise' (*El Sabio*), King of Leon and Castile: 1221-84: succeeded his father, Ferdinand III., 1252. As early as the storming of Seville in 1248, he had given indications of his courageous spirit. But, instead of wisely attempting to expel the Moors and subdue the nobility, he lavished the resources of his kingdom in fruitless efforts to secure his election to the imperial throne of Germany. Rudolf of Hapsburg was chosen in opposition to him. Nor would Pope Gregory X. recognize his claims even to the duchy of Swabia. Soon after, his throne was threatened by the turbulence of the nobility and his wars with the Moors. The latter, however, he defeated in 1263, in a bloody battle, and took from them Xeres, Medina-Sidonia, San-Lucar, and a part of Algarve, uniting at the same time Murcia with Castile. In 1271, an insurrection broke out in his dominions at the head of which was his son Philip. Three years

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elapsed before it was finally quelled. In the mildness with which he treated the rebels, men saw only indications of his weakness. But afterwards determining to employ more stringent measures, his son Sancho also rebelled, and in 1282 deprived him of his throne. He now sought the help of the Moors; but after fruitless efforts to recover his power, he died at Seville, 1284, April 4. He was the most learned prince of his time, and has acquired lasting fame through the completion of the code of laws commenced (though this is disputed) by his father, and called *leyes de las Partidas*, which in 1501 became the universal law of the land. There are still extant several long poems of his, besides a work on chemistry, and another on philosophy. He is also credited with a history of the church and of the crusades, and is said to have ordered a translation of the Bible into Spanish. He labored much to revive knowledge, increasing both the privileges and professorships of the Univ. of Salamanca. He sought to improve the Ptolemaic planetary tables, whose anomalies had struck observers even at that early time. For this purpose, in 1240, he assembled at Toledo upwards of fifty of the most celebrated astronomers of that age. His improved tables, still known under the name of the Alfonsine Tables, were completed in 1252 at the cost of 40,000 ducats—an unprecedented sum to be expended on such a work in those days. The results obtained by means of the Alfonsine Tables were no more accurate than those of the older ones, for both were based on the same erroneous hypothesis of Epicycles (q. v.). The *Opusculos Legales* of A. were published by the Royal Historical Society of Madrid in 1836.

ALFORD, *awlf'ôrd*, HENRY, D.D.: 1810-71; b. London: a biblical critic of the highest reputation, and also a poet of considerable genius. Educated first at Ilminster grammar-school in Somersetshire, and finally at Trinity College, Cambridge, where he gained his degree, and took orders in the church. His first volume, published at Cambridge, 1831, was entitled *Poems and Poetical Fragments*. Three years afterwards, the young author was elected a Fellow of Trinity, and in the following year (1835), appeared his most popular work, *The School of the Heart, and other Poems*, frequently re-issued, especially in America. About the same time, A. was appointed vicar of Wymeswold, Leicestershire, where he remained till 1853, gradually enlarging the circle of his studies, and obtaining fresh honors. In 1841, he published *Chapters on the Greek Poets*, which exhibit both purity of taste and breadth of scholarship. In 1844, appeared the first vol. of his *magnum opus*, the Greek Testament with notes and various readings; the second was not published till 1852. In 1853, he was removed to Quebec Street Chapel, London, where he continued to maintain his high reputation as a sound and eloquent preacher, until, 1857, he was appointed Dean of Canterbury by Lord Palmerston. A.'s poetry is characterized not so much by depth or originality as by freedom from affectation, obscurity, or bombast. His Greek Testament, which was completed 1861, occupies the first rank among English editions. Among his latest writings was *A Plea for the Queen's English*, which excited

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considerable discussion. He also published several volumes of sermons. He died 1871, Jan. 12. See *Life, Letters*, etc. (1873).

ALFRED, *ālfred*, surnamed THE GREAT: 849-901; b. Wantage, Berkshire. His father was Ethelwolf, son of Egbert, king of the West Saxons; and though the youngest of four sons, he succeeded to the crown, at the age of 23, on the death of his brother Ethelred. He had already given proofs of high ability as a general in repelling the incessant incursions of the Danes, at that time the most terrible warriors in Europe. After he succeeded to the throne, he redoubled his exertions to restore the independence of his country. At first he strove without success, while the Danes continued to pour fresh bands upon the coast, and the Anglo-Saxons either bent to the yoke or forsook their homes. In 878, the invaders had completely overrun the whole kingdom of the West Saxons. A., no longer able to collect an effective army, was obliged to seek security in the hills and forests, and for some time found refuge in a cowherd's hut. He still, however, kept up some communication with his friends; and as soon as the people began once more to arm against the Danes, he built a stronghold on an elevation or island (still known as Athelney, i.e., the 'island of the nobles,' or the 'royal island') amid the marshes of Somersetshire, to which he summoned his faithful followers. From this fortress he made frequent successful sallies against the enemy, and after a comparatively short time, he found himself at the head of a considerable army, with which he totally routed them (878) near Edington, in Wiltshire. After holding out for some time in a stronghold to which they had retreated, the invaders capitulated. A. accepted hostages, and their solemn oath to quit his territory of Wessex, and receive baptism. Their king, Godrun or Guthrun, was baptized, with thirty of his followers, and ever after proved faithful in his allegiance to A.

After this decisive victory, the power of A. steadily increased, both by land and sea—for already he had built England's first fleet—he beat the Danes in numerous battles, and gradually their possessions were confined to the n. and e. coasts. In 886, A., without any formal installation, became recognized as the sovereign of all England, a title to which he had proved his right by the most indisputable of arguments. During the ensuing years of peace, he rebuilt the cities that had suffered most during the war, particularly London; erected new fortresses, and trained the people to the use of arms, while he encouraged husbandry and other useful arts, and founded those wise laws and institutions which contributed so much to the greatness and welfare of England. The grateful reverence of posterity has, as is usual with mankind, become prodigal in its awards, ascribing to A. the entire credit of having established many beneficial institutions, some of which had already existed among the Anglo-Saxons, but were by him revived, remodelled, and improved. Of his political institutions, little is known beyond the fact that he compiled a code of laws, divided England into counties, hundreds and tithings, and thor-

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oroughly reformed the administration of justice by making these tithings, hundreds, etc., so far as was practicable, responsible for the offenses committed within their jurisdiction. William of Malmesbury, with enthusiastic exaggeration, declared that 'a purse of money, or a pair of golden bracelets,' might in A.'s day be exposed for weeks in complete safety on the common highways. A. is also said—though erroneously, as is now believed—to have been the author of 'trial by jury.' In an age of ignorance and barbarism, A. was an accomplished scholar and a zealous patron of learning. No prince of his age did so much for the diffusion of knowledge, and few monarchs at any time have shown an equal zeal for the instruction of their people. He caused many manuscripts to be translated into Anglo-Saxon from Latin, and himself translated several works, such as Boethius on the *Consolation of Philosophy*, the *History of Orosius*, Bede's *Ecclesiastical History*, and *Selections from the Soliloquies of St. Augustine*. Among his original works in the Anglo-Saxon language are *Laws of the West Saxons*, *Institutes*, *Chronicles*, *Meditations*, etc. All his works strikingly indicate the serious, elevated, and yet practical character of the man. In his translations, A. is frequently more than a translator. He adds his own reflections to those of his author; and expands the geographical outline of Orosius by a chart of Germany, an account of the Baltic, and the icy regions towards the north pole, which are reasonably correct, considering the means which then existed for acquiring a knowledge of these places. Several works attributed to A. are believed not to be genuine.

The peaceful labors of A. were, 893, interrupted by a fresh invasion of Northmen under Hæsten or Hastings, more formidable than any that had yet been attempted in his reign. The defection of the East Anglians and Northumbrians added to the difficulties with which he had to contend. A., however, was fully prepared, and though, during their protracted stay in his dominions, the invaders overran a large extent of country, and committed considerable depredations, they were beaten in almost every encounter with the English, and finally quelled. A. d. 901, October 27, aged 52, leaving his country in the enjoyment of comparative peace and prosperity, the fruit of that wise and energetic rule which has made his memory dear to all generations of Englishmen, as that of their best and greatest king. We cannot perhaps realize the resolute patience of A., in his political and military capacity, for we have a very imperfect knowledge of the obstacles in his way; but it must excite both our wonder and reverence to behold a man pursuing solitarily, in the midst of ferocity, barbarism, and ignorance, and in spite of the perpetual pains with which his body was racked, so many various and noble schemes for the civilization and true glory of his country.—The most authentic and interesting of the original sources of information on the history of A., is the life by Asser, bishop of Sherborne, a book distinguished by extreme simplicity and affection. The best edition is that of Wise

ALFRETON—ALGÆ.

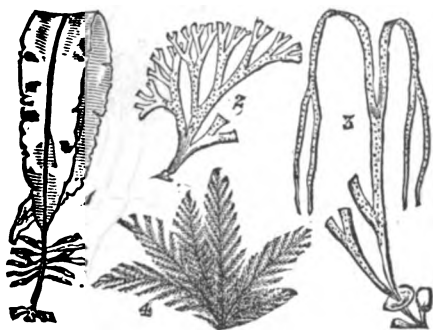
(Oxford, 1782). Of the recent Lives, the most complete and careful are that of Prof. Reinhold Pauli, edited by T. Wright, and that by Mr. T. Hughes (1869).

ALFRETON, *āl'fre-tŭn*: market-town of Derbyshire, Eng., 12 m. n.n.e. from Derby; a station on the Erewash branch of the Midland railway. It has manufactures of hats, stockings, and brown earthenware. There are collieries and iron-works in the vicinity. The town is irregularly built, and contains many very old houses, but has of late rapidly increased. It is said to derive its name from Alfred the Great. Pop. (1871) 3,680; (1881) 4,492.

ALFRIC: see **ÆLFRIC**.

ALGÆ, n. plu. *āl'jē* [L. *alga*, sea-weed]: an order of sea or aquatic plants. **ALGA**, n. *āl'gā*, an aquatic plant of the Order *Algæ*. **ALGUS**, a. *āl'gūs*, pertaining to sea-weed. **ALGID**, a. *āl'goyd* [L. *alga*: Gr. *eidos*, a form]: like sea-weed. **ALGOLOGY**, n. *āl-gŏl'ō-jī* [Gr. *logos*, discourse]: a treatise on the algæ or sea-plants; the study of sea-plants.

ALGÆ: a natural order of plants, belonging to the class *Cryptogamia* of Linnæus, and to the *Acotyledones* of the natural system. It contains a great number of species, about 2,000 being known and described, and among these there is a great variety of forms. They grow for the most part in water, some in fresh, and some in salt water, but some on moist rocks or ground; while others are frequently found covering the glass and pots of hot-houses. Some species occur even upon diseased animal tissue, as *Achlya prolifera* upon the gills of fish, while *Sarcinula ventriculi* (q.v.) appears to be formed in the human stomach. They are most numerous in still or stagnant water and in warm climates. Their structure is very various; they are found



Algæ.

- | | |
|--------------------------------|----------------------------------|
| 1. <i>Alaria esculenta</i> . | 3. <i>Himanthalia lorea</i> . |
| 2. <i>Dictyota dichotoma</i> . | 4. <i>Rytidhloea thuyoides</i> . |

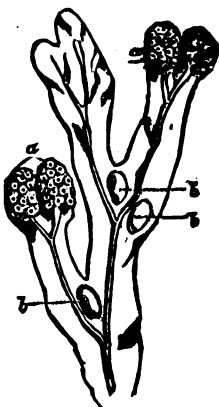
of all grades, from the little microscopic vesicle, to great sea-weeds, which ramify like trees. The diversity in size is as great as in form; some species being visible only through the microscope, and resembling mold or rust; some a few

ALGÆ.

inches, others several feet in length; while the *Laminaria*, which float in the South American seas, measure more than 100 feet; and *Macrocystis pyrifera* of the Pacific Ocean reaches the length of 1,500 feet. Yet they are seldom to be found as thick as the finger, or as broad as the hand, although some far exceed these dimensions, the trunk of *Lessonia fuscescens* attaining the thickness of a man's thigh. Some species are firmly fixed at the bottom of the water, some adhere to rocks and stones left dry by the retiring tide; some frequently break loose, and float about upon and beneath the surface. They have in no case proper roots, but merely processes for their attachment to the surfaces on which they are fixed; they seem to derive their nourishment by all parts of their surface from the water or moist air in which they grow. The Gulfweed (*Sargassum*) floats in long pieces in the Atlantic Ocean and all the great seas; a large portion of the sea between the West Indies and the Canary Islands, is specially called the *Mer de Sargasse*. The weed is carried in such quantities by the current into the Gulf of Mexico, that it covers the sea in tracts of many miles in breadth, and gives it the appearance of a meadow. Many fabulous stories were related of this Gulfweed by the mariners of the 15th c. Ships were said to have been stopped in their course, and the crews obliged to cut their way with hatchets. The discoveries of Columbus put an end to these exaggerated reports.

A. are entirely cellular in their structure, however elongated may be their fronds, having no proper vessels, but consisting of an irregular tissue of utricular cells. The fronds of many are articulated. Some of the simplest or lowest organization are propagated by spontaneous separation; in others, the reproductive organs consist of spores (see ACOTYLEDONOUS PLANTS) enclosed in *perispores*, and variously disposed in receptacles of different kinds; sometimes in the interior of the cells. *Antheridia* (q. v.) also occur in some; and *zoospores*, or spores with moving *cilia*, which exhibit phenomena of motion resembling those of animal life. The *Diatomaceæ*, in which the ordinary mode of reproduction is by spontaneous separation, have by some been referred to the animal kingdom. They are entirely microscopic, resemble the animalcules called *Infusoria*, and are generally found in still waters and moist places, but occur in prodigious numbers in some parts of the Antarctic Ocean, where they give a color to the water.

A. differ from Fungi (q. v.) in deriving their nourishment exclusively, as it would seem, from the medium by which



Fucus vesiculosus:

showing the receptacles of the fructification *a, a* at the ends of the branching frond; *b, b, b*, large air-cells which help to float the plant.

ALGA MARINA—ALGAROTTI.

they are surrounded, and not from the substance upon which they grow. The substance of which they are composed is also very different. Yet it has been felt not a little difficult to determine to which of the two orders some of the lowest forms of vegetable life should be referred.

As to their substance, A. consist chiefly of vegetable gelatine, which dissolves in water when they are boiled in it. The harder parts of their fronds are sometimes coriaceous, or horny, or cartilaginous, but never really ligneous. Their color is not always green, but mostly brown or yellow, sometimes purple, or violet, or rose color; and many of them present a very beautiful appearance when examined through a microscope. Many contain an abundance of iodine. Different species of Wrack (*Fucus*), (q.v.), which are cast on shore in vast confused masses by the waves, are gathered and burned in the Orkney Islands, in Normandy, and other parts of the world, the ashes forming an article of commerce under the name of Kelp (q.v.), and containing much of the iodide of sodium. Sea-weeds of all kinds are an excellent manure. None of the species are poisonous, and some of them are used for food, as Carrageen (q.v.) or Irish-moss, Dulse (q.v.), Laver (q.v.), etc. The edible swallows' nests of the Indian Archipelago are composed of a species of sea-weed. Several kinds are eaten as articles of luxury by the Chinese. *Plocaria tenax*, one of the species so used, furnishes them also with an admirable glue, of which great quantities are prepared and brought to the market. *Plocaria helminthocorton*, Corsican moss, a native of the Mediterranean, and found principally around the shores of Corsica, is used as a vermifuge. See PLOCARIA.

This natural order is divided into five sub-orders, regarded by some as distinct orders—namely, *Characeæ* (q.v.): *Fucaeæ* (q.v.); *Ceramiaceæ* (q.v.): *Conferraceæ* (see CONFERRA); and *Diatomaceæ* (q.v.). The Characeæ are sometimes separated as a distinct order of higher organization, while the rest are united under the name Algæ. See Kützinger's *Phycologia Generalis* (Leip. 1843), and his *Species Algarum* (Leip. 1849); Greville's *A. Britannicæ* (Lond. 1830); *British Sea-weeds*, nature-printed (Lond.: Bradbury and Agnew).

ALGA MARINA: see GRASS WRACK.

ALGARDI, *âl-gar'dè*, ALESSANDRO: 1602–54; b. Bologna: an Italian sculptor, ranked next to Lor. Bernini among Italian sculptors of the 17th c., excelling especially in the representation of nude figures. His works, however, suffered from the faults prevalent in his time, especially from a striving after pathos and picturesque effects, opposed to the true character of sculpture. His most important work is a colossal relievo of Attila in St. Peter's, Rome. His statue of the God of Sleep in the Villa Borghese has frequently been mistaken for an antique.

ALGARO'BA: see CAROB.

ALGAROTH, n. *âl-gâ-rôth* [said to be after discoverer]: the oxychloride or flowers of antimony.

ALGAROTTI, *âl-gâ-rot'è*, FRANCESCO, Count: 1712–64; b. Venice: an Italian author; studied in Rome and Bologna,

ALGARVE—ALGEBRA.

and when 21 years old, published in Paris (1733), a work, entitled *Newtonianismo per le Dame* (The Newtonian Philosophy adapted to the Ladies), which was the basis of his subsequent reputation. Until 1739, he lived in France. On his return from a journey to Russia, A. became acquainted with Frederick II. of Prussia, who elevated him to the rank of count, and made him, in 1747, lord chamberlain. He was also patronized by Augustus III., of Poland, and lived alternately in Berlin and Dresden until 1754, when he returned to Italy. He died 1764, March 3, at Pisa, where, in the Campo Santo, Frederick the Great raised a monument to his memory. Though his poetry shows no great genius, his letters rank with the best in Italian; and in his own time he was recognized as a good judge of painting and architecture, and his reputation is confirmed by his work *Saggi sopra le Belle Arti* (Essays on the Fine Arts), and by the paintings that he selected for the Dresden gallery.

ALGARVE, *ál-gár'vā*: smallest and most southerly of the provinces of Portugal, between Andalusia and the Atlantic Ocean: estimated 1,875 sq. m. In ancient times it was much more extensive. It received its name from the Arabs, in whose language A. signifies 'a land lying to the west.' It was a Moorish province till 1253, when Alphonso III. united it to the crown of Portugal as a separate kingdom. The n. part of the province is occupied by a range of mountains of an average height of 4,000 ft., which form the continuation of the Sierra Morena of Spain, and terminate in Cape St. Vincent, the s.w. extremity of Europe. The highest ridges are entirely destitute of vegetation; and the mountainous tract in general admits of but little cultivation. From the main ridge, the country slopes s. in jagged terraces and low hills, leaving a level tract of a few m. along the coast. The soil of this plain is but indifferently suited for the production of grain, or even of pasture; but it produces abundance of the finest fruits of the south, even plantains and dates. The wine is also of excellent quality. The African heat of the climate is mitigated by the cool sea-breeze. The only river of importance is the Guadiana, on the frontiers of Spain. The inhabitants employ themselves chiefly in fishing, in manufacturing salt, and cultivating fruit. They are considered the best sailors and the truest friends in Portugal. Pop. (1881), 204,037. The chief town is Faro (pop. 8,600).

ALGEBRA, n. *ál'jě-brā* [Sp.; It.; mid. L. *al'gebra*—from Ar. *al, gabr*, the putting together of broken things]: arithmetic by signs—commonly the letters of the alphabet—the first letters, *a, b, c, d*, etc., represent known quantities, and the last letters, *v, x, y, z*, unknown quantities. **ALGEBRAIC**, a. *ál'jě-brā'ík*, or **AL'GEBRA'ICAL**, a. *-i-kil*, pertaining to algebra. **AL'GEBRA'ICALLY**, ad. *-lī*. **AL'GEBRA'IST**, n. one who is skilled in algebra.

ALGEBRA: a branch of pure mathematics. The name is derived from the Arabs, who call the science *Al gebr wal mokābala*—i.e., supplementing and equalizing—in reference

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to the transposition and reduction of the terms of an equation. Among the Italians in early times it was called *Arte Maggiore*, as having to do with the higher kinds of calculation, and still oftener *Regola de la Cosa*, because the unknown quantity was denominated *cosa*, the 'thing;' hence the name of *Cossike Art*, given to it by early English writers.

The term Algebraical is generally applied vaguely to any expression or calculation in which signs are used to denote the operations, and letters or other symbols are put instead of numbers. But it is perhaps better to restrict the name A. to the doctrine of Equations (q.v.). Literal arithmetic, then, or multiplying, dividing, etc., with letters instead of Arabic ciphers, is properly only a preparation for A.; while Analysis (q.v.), in the widest sense, would embrace A. as its first part. A. itself is divided into two chief branches. The first treats of equations involving unknown quantities having a determinate value; in the other, called the Diophantine or Indeterminate Analysis, the unknown quantities have no exactly fixed values, but depend in some degree upon assumption.

The oldest work in the West on A. is that of Diophantus of Alexandria, 4th c. It consisted originally of 13 books, and contained arithmetical problems: only 6 books are now extant. They are written in Greek, and evince no little acuteness. The modern Europeans got their first acquaintance with A., not directly from the Greeks, but, like most other knowledge, through the Arabs, who derived it, again, from the Hindus. The chief European source was the work of Mohammed Ben Musa, who lived in the time of Caliph Al Mamun (813-833); it has been translated into English by Dr. Rosen (Lond. 1831). An Italian merchant, Leonardo Bonaccio, of Pisa, travelling in the East about 1200, acquired a knowledge of the science, and introduced it among his countrymen on his return; he has left a work on A., not yet printed. The first work on A. after the revival of learning is that of the Minorite friar Paciolo or Luca Borgo (Ven. 1494). Scipio Ferreo in Bologna, discovered, 1505, the solution of one case of cubic equations. Tartaglia of Brescia (d. 1557) carried cubic equations still further, and imparted his discoveries to Cardan of Milan, as a secret. Cardan extended the discovery himself, and published, 1545, the solution known as 'Cardan's Rule.' Ludovico Ferrari and Bombelli (1579) gave the solution of biquadratic equations. A. was first cultivated in Germany by Christian Rudolf, in a work printed 1524; Stifel followed with his *Arithmetica Integra* (Nürnberg. 1544). Robert Recorde, in England, and Pelletier, in France, wrote about 1550. Vieta, a Frenchman (d. 1603), first made the grand step of using letters to denote the known quantities as well as the unknown. Harriot, in England (1631), and Girard, in Holland (1633), still further improved on the advances made by Vieta. The *Géométrie* (1637) of Descartes makes an epoch in A.; it is rich in new investigations. Descartes applied A. to Geometry, and was the first to represent the nature of curves by means of equations. Fermat also contributed

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much to the science; and so did the *Arithmetica Universalis* of Newton. To these names may be added Maclaurin, Moivre, Taylor, and Fontaine. Among the chief promoters of A., in more recent times, are Euler, Lagrange, Gauss, Abel, Fourier, Peacock, De Morgan, etc.

ALGECIRAS, or ALGEZIRAS, *âl-jé-zé'ras*: town in Spain, prov. of Cadiz, on the Gulf of Gibraltar. Its harbor is bad, but it has a good dock, and fine aqueducts. The citadel is in a very dilapidated condition, and the trade in corn and brandy is no longer important. The place, however, which is pleasantly situated, has a picturesque appearance. It was the first town in Spain taken by the Moors (713), in whose possession it remained for seven centuries; but in 1344, after a siege of 20 months, it was retaken by the brave Alfonso XI., king of Castile. It is said that crusaders from all parts of Europe were present at this siege, which was *the* siege of the age, and is spoken of as such. Edward III. of England purposed coming in person to the assistance of the Spanish monarch, whom he greatly admired. Alfonso destroyed the old Moorish town; the modern one was built by Charles III. in 1760. Between Algeciras and Tarifa, 1801, June 6, the English admiral Saumarez attacked the combined French and Spanish fleets under Rear-Admiral Luinois. He was defeated, but renewed the engagement a few days afterwards, and gained a complete victory. A. is 5 m. from Gibraltar, across the bay or gulf, and 10 round by land. Pop. 12,465.

ALGEMESI, *âl-hā-mā-sé'*: town of Spain, province of Valencia, 21 m. s.s.w. of Valencia, near the river Jucar. It produces rice and silk, and holds a celebrated annual fair in September.

ALGER, *âl-jér*, WILLIAM ROUNSEVILLE: b. 1823, Dec. 11; a native of Massachusetts; graduated from Harvard in 1847. In 1875-76, he was pastor of the church of the Messiah, Unitarian, New York city. He has written a number of works, among which are a *Critical History of the Doctrines of a Future Life*, *Genius of Solitude*, *Friendships of Women*, etc.

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ALGERIA, *āl-jērī-ā* (in French, **ALGÉRIE**): a country on the n. coast of Africa, a subordinate part of the Turkish Empire till 1830; now a French colony. It lies between 2° 8' w. long., and 8° 32' e. long. It is bounded on the n. by the Mediterranean, on the e. by Tunis, on the s. by Sahara, and on the w. by Morocco. The French have extended their dominions more than 200 m. into the interior, but those of the deys—the former rulers of A.—comprehended territories lying nearly twice as far s. A. is now estimated to have about 150,000 sq. m. The chief towns are Algiers, Oran, Constantine, Bona, and Tlemzen. Upwards of 7,000,000 acres are under cultivation. Physically, A. forms a part of the n. border of the great plateau of N. Africa, which here rises from the sea in three terraces. The Atlas Mountains run parallel to the coast-line. Behind these, a vast tract of heathy plains, called the *Sebkhās*, interspersed with salt-lakes, stretches southwards, until bounded by a second chain of mountains of various heights; beyond which, again, lies the great desert of Sahara, extending to the banks of the Niger. The plains and valleys which open out towards the sea in the n. of A., such as those round Bona, Algiers, Oran, etc., are extremely fertile, abound in wood and water, consist mostly of a calcareous soil, and are well adapted for agriculture. They form the *Tell*, which was once one of the granaries of Italy. In strong contrast to these are the *Sebkhās* or lesser deserts, covered with herbs and brushwood, but almost destitute of fresh water, except where here and there they are interrupted by an oasis. The most s. part of the country beyond the Atlas partakes of the nature of the Sahara, but contains oases covered with palm-trees, and well peopled. This is a part of the 'date-country,' or 'Blad-el-Djerid.' There are no rivers of any importance in the entire colony, nothing beyond mere coast streams, which rise in the neighboring Atlas. The largest is the Shelif, about 230 m. in length. With respect to the climate, the heat in the *Tell* is sometimes very great. On the coast it is mitigated by the sea-breeze; and among the high mountains of the interior, the winters are even cold. The average temperature of Algiers is about 63° F. A. is not unfrequently visited by the *simoom*, or hot wind, called by the Italians *sirocco*, and by the Spaniards *solano*. Its mineral wealth is considerable; iron, lead, copper, and manganese are found. The marble of Numidia was in requisition in ancient times. Extensive forests of oaks, cedars, pines, and pistachio-nut trees cover large portions of the country, and furnish an abundant supply of timber and resin. The cereals and the olive are cultivated in the Tell; and the oases of Sahara are famed for their dates. The domestic animals of A. are the ox, the sheep, the goat, and the camel; but the once noble race of Numidian horses is degenerated. Pop. (1881) 3,810,412, composed of various elements. Besides Europeans (abt. 800,000), there are Kabyles and Arabs, who compose the bulk of the people; also Moors, negroes, and Jews.

Language.—Four languages are spoken in A., the Berber, the Arabic, the Turkish, and the negro dialects,

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The Berber, which is the most ancient of all, has a variety of dialects, and is spoken by all the Kabyle tribes. It possesses no literature in its own alphabet, Arabic characters alone being used. The Arabic is of course an importation from the East, and has borrowed expressions and idioms from the various native languages with which it came into contact; but its differences are comparatively slight. The Koran is the great bond of union. The Turkish, since the French conquest, has become almost extinct. The negro dialects are of little consequence.

History.—In the most ancient times the Numidians were settled in the e. part of the regency, and the Moors (or Mauri) in the w. Under the Romans, the former was included in the province of Africa, while the latter was called Mauritania Cæsariensis. Like the rest of N. Africa, it had then reached its highest prosperity. It had numerous cities, which were principally Roman colonies. But its conquest by the Vandals, under the famous Genseric, about 440, threw it back into a state of barbarism, from which it only partly recovered after the Mohammedan immigrants had established their dominion. About 935, the city, Al-Jezira, i.e., the island, and later Al-Gazie, i.e., the warlike, now called Algiers, was built by an Arabian prince, Zeiri, whose successors ruled the land till 1148, after which it was governed by the Almohades (q.v.) till 1269. It was then split up into many small territories. In 1492 the Moors and Jews who had been driven out of Spain settled in A., and began to revenge themselves on their persecutors by piracy. Ferdinand, the Spanish monarch, attacked them on this account, took the city of Algiers in 1509, and erected fortifications on the island which forms its harbor. One of the Algerine princes, the Emir of Metidja, whose territories were threatened by the Spaniards, now invited to his assistance the Greek renegade, Horuk or Harude Barbarossa, who had made himself famous as a Turkish pirate chief. This laid the foundation of the Turkish dominion; for when Barbarossa arrived in 1516, he treacherously turned his corsair bands against the emir, whom he murdered, and then made himself sultan of Algiers. His subsequent successes alarmed the Spaniards, who marched an army against him from Oran. Barbarossa was defeated in many encounters, and, at last, being taken prisoner, was beheaded in 1518. His brother was then chosen sultan. He put himself under the protection of the Ottoman court, by the help of a Turkish army drove the Spaniards out of the country, and established that system of military despotism and piracy which lasted until 1830, and which sunk A. into a state of ruinous degradation. In 1541, the emperor Charles V. made a bold attempt to crush this nation of corsairs. He landed in A. with a fleet of 370 ships, and 30,000 men; but a fearful storm, accompanied by earthquakes and water-spouts, destroyed the greater portion of the former, and rendered the latter destitute of victuals, etc.; so that the expedition failed, and Charles was glad to re-embark, which he managed to do with extreme difficulty.

The history of A., under the Moslems, offers few episodes

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worthy of notice. The Algerines continued to carry on their piratical war against the powers of Christendom, venturing even to land on the Italian and Spanish coasts. Inland, too, they were constantly fighting to extend their territories. Before the end of the 16th c., they had subdued the whole country to the verge of Morocco, with the exception of Oran, which belonged to Spain. The Spaniards were invariably unsuccessful in their attempts at reprisals. Emboldened by success, the Algerines pushed their piratical expeditions even beyond the Straits of Gibraltar. In 1600, the Turkish janissaries of Algiers obtained from the Constantinopolitan court the right to choose a dey from among themselves, who should share the power with the pasha appointed by the sultan, and be their commander-in-chief. The result of this divided authority was internal strife and confusion. Nevertheless, the insolence of the Algerines at sea increased. They attacked even the coasts of Provence, compelling Louis XIV. to chastise them thrice; which he did, however, with very little effect. An incident occurred during the first bombardment of Algiers by the French fleet in 1682, which illustrates the reckless ferocity of these corsairs. By way of answer to the cannonading of his enemies, the dey caused the French consul, Vacher, to be shot off from the mouth of a mortar! After the third bombardment in 1687, the dey scornfully inquired of the French how much money the burning of Algiers had cost their master, and on being told, coolly replied that 'he would have done it himself for half the sum, and spared their king the trouble.' No more decisive result followed the attack of Admiral Blake in 1655, nor of the English and Dutch fleets in 1669 and 1670; yet the English were the first to form treaties with the Algerines. In 1708, the dey, Ibrahim, made himself master of Oran; and his successor, Baba-Ali, succeeded in effecting the virtual emancipation of the country from the dominion of the Porte. He banished the Turkish pasha; craftily persuaded the sultan of Turkey to leave the power solely in his hands; carried on war, and concluded peace at his own pleasure, and paid no more tribute.

A. was now ruled by a military oligarchy, at the head of which stood the dey, and after him the powerful Turkish militia, recruited from Constantinople and Smyrna, because their children by native mothers could not enjoy the same privileges as themselves. Besides these, there was a divan, or council of state, chosen from the sixty principal civil functionaries. The internal history of the country henceforth presents nothing but a bloody series of seraglio revolutions, caused by the lawless janissaries, who permitted few of the deys to die a natural death. In 1775, Spain undertook her last great expedition against A., with 44 ships of war, 340 transports, and 25,000 soldiers. This, however, was as singularly unfortunate as all her previous ones. Everything went wrong, and the Spaniards had to re-embark as speedily as possible, leaving behind them 1,800 wounded, and all their artillery. Thus A. continued to defy the greater Christian powers, and to enforce tribute from the lesser. During the French Revolution, and the time of the empire,

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its piracies were much diminished in consequence of the presence of powerful fleets in the Mediterranean Sea; but at the close of the war, they were recommenced as vigorously as ever. This brought down upon 'the nation of corsairs' the vengeance of the Christian powers. The Americans took the lead, attacked the Algerine fleet off Carthage. 1815, June 20, defeated it, and compelled the dey to acknowledge the inviolability of the American flag. About the same time, the English admiral, Lord Exmouth, extorted from the other states of Barbary the recognition of an international law respecting the treatment of prisoners. A. alone refused to consent to it; and after a delay of six weeks, the English and Dutch fleets, under the command of Lord Exmouth, fiercely bombarded the capital. The batteries of the pirates were soon silenced; and in a few hours the half of the city lay in ruins, its naval force and its magazines being all destroyed. The dey, an ignorant and obstinate barbarian, still wished to protract the fight, but his soldiery forced him to yield, and a treaty was concluded (1816), by which all Christian slaves were released without ransom (the number was 1,211), and a promise was given that both piracy and Christian slavery should cease forever. But nothing could keep these wretches from piracy. As early as 1817, they ventured as far as the North Sea, and seized all ships in their course not belonging to any of the powers who sent them tribute or presents, as was done by Sweden, Denmark, Portugal, Spain, Naples, Tuscany, and Sardinia. Nor did even treaties avail to protect European vessels at all times. The Spanish, the Papal, and, in particular, the German shipping, suffered severely; while the dey mocked by his insolent replies the remonstrances addressed to him.

Meanwhile the internal condition of A. continued to present the spectacle of a cruel prætorian despotism. In the year 1817 the power of the janissaries was greatly weakened by the skilful tactics of the dey, Ali. Upon his death, occasioned by the plague in the following year, Hussein was chosen in his stead, under whom the Moslem dominion was terminated by a conflict with France. The causes of this conflict were various. A French trading-brig was plundered in Bona, in 1818; the dwelling of the French consul was attacked in 1823; Roman ships sailing under the protection of the French flag were seized, and even French ships were detained and plundered. But the chief cause of the quarrel was a dispute about the payment of a debt incurred by the French government to two Jewish merchants of Algiers at the time of the expedition to Egypt. This debt was fixed at seven millions of francs: four and a half millions were immediately paid; the rest was reserved until the counter-claims of certain French creditors should be decided in the French law-court. For three years the lawsuit dragged its slow length along, till the dey became impatient—being himself a principal creditor of the Jewish-Algerine house—and angrily demanded payment from the king of France. To his letter no answer was returned. The feast of Beiram occurring soon after, when it was customary for

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the dey to receive all the consuls publicly, he asked the French consul why his master had remained silent. The latter haughtily replied that 'a king of France could not condescend to correspond with a dey of Algiers.' Upon this the dey struck him on the face, and fiercely abused his sovereign. In consequence of this insult, a French squadron was sent to Algiers, which received the consul on board, and blockaded the city (1827, June 12). Six days after, the dey caused the French coral-fisheries at Bona to be destroyed. For three years the blockade was listlessly carried on; but in April, 1830, during the ministry of Polignac, a warlike manifesto appeared, and a month later a fleet sailed for the African coast, consisting of 100 ships of war, and 357 transports, having on board an army of 37,000 infantry, 4,000 cavalry, and a proportionate number of artillery, under the command of Lieut.-Gen. Bourmont. The landing was effected with little opposition. A perpetual skirmishing then took place previous to the bombardment of Algiers, which commenced July 4. Next day a capitulation was agreed to. The Turkish soldiers marched out—for such were the conditions—with their families and private possessions, and the French took possession of the place. Fifteen hundred guns, 17 ships of war, and 50,000,000 francs fell into their hands as spoil. The dey retired to Port Mahon, with his private property and a train of 118 persons, while the greater number of the Turkish janissaries were conveyed to Asia Minor. The conduct of the French soldiery, however, it must be confessed, tarnished the glory of their conquest. They went about plundering remorselessly the beautiful villas and gardens in the neighborhood of Algiers, as well as the ancient valuables and works of art, thus exciting a universal spirit of hostility in the natives, who kept up an incessant guerilla warfare outside the capital.

After the revolution of July, Marshal Bourmont resigned, and Gen. Clausel was appointed his successor. The latter, who was a prompt and vigorous man, set about subduing the country, and giving it a regular government. His predecessor had committed a great mistake in driving out the Turks, who might have been usefully employed in subordinate functions of authority. After their banishment the Kabyles and Bedouins, believing themselves emancipated from all subjection, and stimulated by intense fanaticism against the new conquerors, rose in rebellion, or rather commenced a series of petty struggles, which obstructed the colonization of A. for many years, and which cannot be said to have altogether ceased even yet. The imposition of French laws and institutions was made not in the wisest spirit, most of the old Turkish regulations being summarily abrogated. Besides this the natives were wounded in their most susceptible point. Their mosques and burying-grounds were frequently desecrated and destroyed; and Clausel, whose vigor was more remarkable than his justice or prudence, confiscated—in direct contradiction to the very words of the capitulation—all the immovable property of the deys and other exiled Turks, and of the townships, besides vari-

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ous religious institutions. The effect of these political crimes was instant. The entire provinces determined obstinately to resist; some even of the provincial rulers who had previously submitted now appeared in arms again. Clausel was compelled to undertake a military expedition against the refractory beys; but his uncertain successes only inflamed the hatred and patriotism of the Kabyles and Arabs, who opposed him energetically. A young emir at last appeared on the scene, Abd-el Kader (q.v.), who soon became the rallying point of the *Jad* ('holy war') which the Marabouts had begun to preach. Under these circumstances it became impossible for Clausel to carry out his scheme of colonization, and only a reckless speculation in land took place, which was in every way injurious. To strengthen his position the French general, whose army was now greatly reduced, made a treaty with the bey of Tunis; but the home government disapproving of it, he was recalled in consequence. His successor, Gen. Berthezène, having achieved nothing but defeat and disgrace in spite of his cruelties, was also speedily recalled, and Lieut.-Gen. the Duke of Rovigo appointed to the command. He arrived in Algiers 1831, Dec. 25, and established a most severe and relentless system. He scrupled not to perpetrate the most arbitrary acts, cruelties, and treacheries. His two most remarkable actions were, first, the complete annihilation of the whole Arab tribe El-Uffia, when even old men, women, and children were massacred during the night, on account of a robbery committed by some of the members of the tribe; second, the slaying of two Arab chiefs who were hostile to him, and whom he had treacherously allured into the city by the written promise of a safe-conduct. Such monstrous proceedings fired the entire nation. The most peaceful tribes flew to arms, and the French were attacked on all sides. The emperor of Morocco, who secretly fomented the strife, and even meditated the conquest of Oran, assisted the fierce and impetuous Abd-el-Kader in his designs. The health of the duke now declined. He returned to France in March, 1833, and the administration of affairs was provisionally intrusted to Gen. Avizard, who gained some credit by establishing the *Bureau Arabe*. After the death of the duke, Gen. Voirol, a man exactly the reverse of his predecessor, was made interim commander-in-chief. His efforts were directed more to promote the material interests of the colony than to extend the power of France. He met with little opposition in the province of Algiers and in the e. districts; but the war raged fiercely in the w., where Abd-el-Kader had either gained over or subdued all the tribes between Mascara and the sea. At length a treaty was effected with him, in which he pledged himself to make peace and to deliver up all his prisoners. In return he received a monopoly of the corn-trade and the right to buy arms and ammunition in the French ports. Towards the end of 1834 the French government, having resolved to retain permanent possession of the colony, organized its administration anew, placing the supreme power, both civil and military, in the hands of a governor-general, who re-

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ceived his orders from the minister of war. Gen. Drouot d'Erlon was the first appointed to this high dignity. Under him there were a commander of the troops, a commander of the naval force, a military intendant, a civil intendant, and a director of finance. The administration of justice was also regulated by the erection of many tribunals. Frenchmen and foreigners were to be subject to French laws, but the natives to their own. Moreover, the old Algerine courts of justice were still to be kept up. D'Erlon apparently desired at first to occupy himself with the internal administration of the regency, and, in truth, deserved much credit for the introduction of French municipal institutions, and the French system of education and police arrangements; but a disgraceful defeat suffered by the French army at Makta, on an expedition against Abd el-Kader, who had secretly broken the treaty, caused the recall both of the officer in command and of D'Erlon himself. Clausel was now sent back to A. with the title of marshal. He arrived 1835, Aug. 10, his first anxiety being to wipe away the disgrace of the defeat at Makta. About three months afterwards he marched out at the head of 11,000 men to attack Mascara, the centre of Abd-el-Kader's power: he had to fight many petty battles on the way, but was always successful. On reaching Mascara he resolved to set it on fire, which he did on Dec. 8, and then commenced his retreat, in which his army suffered severely from bad weather, and from perpetual harassments by the enemy. Abd-el-Kader was soon more powerful than ever, and Gen. Bugcaud had to be sent out from France with reinforcements; but nothing came of this save a few fruitless victories over Abd-el-Kader, which did the latter no real harm. Bugcaud was at length compelled to make peace, 1837, May 30. Abd-el-Kader recognized the sovereignty of France over the regency. He received in return the government of the provinces of Oran, Titeri, and Algiers, with the exception of the cities of Oran, Arzeu, Masagran, Mostaganem, Algiers, Blidah and Koleah, Sahel (or the 'sea-coast'), and the plain of Metidja. In exchange for the city of Tlemzen, he delivered to the French army 60,000 sacks of corn, and 5,000 oxen; he was likewise permitted to buy arms and ammunition in France. In Feb., 1837, Marshal Clausel was recalled, and Lieut.-Gen. Damrémont succeeded him. The condition of the colony was at this moment desperate, for the disgraces which followed the rash and even reckless measures of Clausel had everywhere lowered the *prestige* of the French army. The duty of the new governor-general was clear, but difficult: he had to wipe out the stain which attached to the honor of his soldiery, and to re-create the conviction of their superiority. He first attacked the Kabyles of the province of Algiers, and chastised them with considerable severity, and then commenced his great work of taking Constantine, from which his predecessor had been compelled ignominiously to retire. In the month of May, with an army of 12,000 disciplined troops, besides *Zuavi* (originally light infantry raised among the natives), *Bataillons d'Afrique* (con-

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vict battalions at first), the *Tirailleurs d'Afrique*, and the *Chasseurs d'Afrique*, as well as the Spahis (a cavalry composed of native soldiers commanded by French officers), Damrémont marched to the attack of Constantine, and in spite of fearful weather, succeeded in storming the city, May 13. This victory laid the foundation for the entire subjugation of the province of Constantine, which was completed in the course of the two following years without any great effort.

Gen. Valée was appointed governor-general 1837, Dec. 1, in the stead of Damrémont, who had fallen at the storming of Constantine. He, like the others, misunderstood the character of Abd-el-Kader when he considered it possible for him to remain quiet. New treaties were made, which only delayed hostilities. Meanwhile, the work of colonization went on in spite of numerous obstacles. The province of Constantine was much improved by the building of towns and the making of roads; but suddenly, 1839, Oct., Abd-el-Kader, whose power had now become formidable to an unprecedented extent, violated the treaty on an insignificant pretext, and fell upon the unprepared French with an overwhelming force. The European settlements in the open plain were attacked and laid waste, bodies of French troops were surprised on their march and cut to pieces, small outposts and encampments were taken in a moment, and by Nov. 24, the dominion of the French was confined to the fortified cities and camps. Even the settlements in the plain of Metidja were lost. Forty thousand Arabs swept over it, and threatened Algiers itself. This state of things demanded energetic measures. The spring campaign was vigorously opened on both sides; everywhere the French gained splendid successes; while the heroic defense of the fort of Masagran, near Mostaganem (garrisoned by only 123 men), against from 12,000 to 15,000 Arabs, who stormed it incessantly, and with the utmost fury, for three days, raised the *prestige* of the invaders higher than ever. Still, however, nothing was really accomplished. After repeated bloody defeats, the native tribes again rushed to arms, swept the plains, and rendered life insecure at the very gates of Algiers. The only thing of any practical importance which took place during the whole year was the beginning of the circumvallation by which the fertile plain of Metidja was to be secured against the hostile incursions of the Arabs. Marshal Valée was now recalled, and Lieut.-Gen. Bugeaud appointed his successor. The latter arrived at Algiers 1841, Feb. 22, and adopted a new system, which was completely successful. A brave, inexorable, and unscrupulous man, he resolved to employ any and every means for the attainment of his purpose. He wearied out the enemy by incessant *raezias* (predatory excursions) against individual tribes, corrupted them (not a difficult thing to do) by all the arts of bribery, and on special occasions undertook great expeditions to annihilate the regular power of Abd-el-Kader, whose strong defensive positions he destroyed, and whose authority he spared no pains to undermine. The French army was

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raised to 80,000 or 100,000 men. Its operations were carried on from three principal points. Victory followed Bugeaud wherever he went. He relieved and victualled hard-pressed garrisons; intimidated the surrounding country; penetrated to Tekedempt—the very stronghold of Abd-el-Kader himself—which he laid in ashes; marched thence to Mascara, which was also taken; and on all sides received the submission of the terrified Arabs. Even the hottest period of the summer was made use of. Bugeaud bribed and seduced from their allegiance those Arabs who were under the sway of Abd el-Kader. The autumn campaign was for the time decisive. Saïda, the last fortress belonging to the gallant emir, was utterly destroyed, and now almost the entire country was subdued. Abd-el-Kader retired into Morocco, where he raised a new army, for his old one had been completely annihilated. He was, however, defeated by General Bedeau, and again compelled to retreat into Morocco, from which, however, he issued a second time, in the summer of 1842, and contrived to maintain a fierce but desultory warfare for two or three years, aided by the sultan of Morocco. At last, however, deserted by most of his followers, pursued by his late ally, and, in fact, hemmed in on all sides, he was forced to surrender to Gen. Lamoricière, at the close of December, 1847. See **ABD-EL-KADER**.

The revolution of February, 1848, somewhat disturbed the progress of conquest and subjugation in A. That superb race of mountaineers, the Kabyles, descendants of the ancient Numidians, and possessed of the same fiery and dauntless spirit, broke out into a new insurrection, which, however was speedily quelled. The National Assembly now offered to the European population of A. to incorporate the country with the republic of France, and to grant it all the accompanying political privileges of a French province; but intelligent men of all parties acknowledged the uselessness and danger of this step. It was, therefore, simply declared to be a permanent possession of the republic. Four deputies from the colony were permitted to take a part in all discussions in the National Assembly on Algerian affairs. Meanwhile, the work of conquest, colonization, and, in some respects, civilization, went on. The French troops penetrated into the far south, almost to the borders of Sahara, sternly reducing to obedience the desert tribes, who manifested a not unnatural antipathy to these inroads, and in some cases fiercely resisted the invaders. Various tribes of the Kabyles, too, opposed every attempt at organized taxation, and the imposition of civilized discipline; the result of which patriotic obstinacy was, a new campaign against them by the French general, Bugia. Fortune again declared for the invaders; but the most alarming insurrection was that excited by the Cherif Bou-zian; who fled for freedom to Zaatcha in the oases. The French pursued him thither; but were beaten, and had to retreat. Some months afterwards they returned, largely reinforced, and in spite of the broad belt of palm-trees which hindered their operations, and the wild and strenuous heroism of the besieged, the

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place was stormed and destroyed. The defenders all perished.

In 1853-54, and again in 1856-57, expeditions were organized against the Kabyles; though not altogether with the will of the colonists, who could not but recognize the great intelligence and industry displayed by that highland race. The struggle was sanguinary and barbarous on both sides, but the French at last subdued their enemies. For two years (1858-60) the military government of A. was superseded by the institution of a special ministerial department for A. and the colonies, which was first of all intrusted to Prince Napoleon. In December, 1860, however, a military government was re-instituted, and Marshal Pélissier made governor general, with a vice-governor under him, a director-general for civil affairs, and a council of thirty members. In 1863, the emperor Napoleon announced that he was willing to give the colony a new constitution, with a chamber of representatives for provincial affairs: he also addressed a letter to the governor-general, in which he explained that A. was no colony in the strict sense of the word, but an Arabian kingdom; and that the natives had the same right to protection as the colonists. In 1864, however, strife again arose between the colonists and the Arabs; and it was only after several engagements, during April and May, that peace was restored by the submission of the conquered tribes. Pélissier having died in May, 1864, Marshal MacMahon was appointed to succeed him. In the following year the emperor himself made a journey to A., and March 5, issued a proclamation, in which, although explaining to the Arabs that A. must continue to be united to France, he promised to maintain their nationality; and at the same time gave them assurance that they should always remain in undisturbed possession of their territories. Yet these and other measures for conciliating the Arabs were all in vain; for, shortly after the emperor's return to France, insurrections broke out in the province of Oran and elsewhere. Si Hamed, a native chief, with 12,000 horsemen at his command, began to harass those tribes which remained in submission, until he was routed by Col. Colomb of Geryville, and forced to escape into Sahara; after which, in the beginning of 1867, two expeditions, led by Colomb and Souis, succeeded in reducing to submission the other tribes which had revolted. In 1867-68, a severe and general famine checked the military enterprises of the Arabs; and there was peace till 1870, when, the Franco-Prussian war having begun, the emperor found it necessary to withdraw to Europe the greater part of the forces in Africa. MacMahon's place was then taken by General Durieu, as interim governor-general; and the natives began to entertain hopes of freeing themselves from the yoke of France. Movements were begun in the provinces of Constantine and Oran which it required all General Durieu's vigilance and activity to hold in check. After this, again, some disorder arose among the colonists themselves, who strongly desired the abolition of the military government—a change which the new republican government at Paris soon gratified them

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by effecting. To Durieu's place was appointed a civil governor, and under him prefects for each of the three provinces. A council was formed—composed of the prefects, archbishop, commander of the army, and other members appointed by the French government—with which, in all important cases, the governor has to take counsel. The territory of the Sahara and adjoining districts remain under exclusively military rule.

The French troops still stationed in A. consist of one 'corps d'armée,' numbering 60,000. It is said that the possession of A. has cost France the lives of 150,000 men, besides \$600,000,000 in money. The revenue of A. is derived chiefly from indirect taxes, licenses, and customs duties. In 1879-83, it was about 81,000,000 francs a year, and the expenditure about 35,000,000. The cost of maintaining the army, however, the outlay for public works, and other large sums disbursed—estimated in 1877 at 25,111,472 francs—are not included in the expenditure, being provided out of the French budget.

Since the subjugation of A., the French have conferred various benefits on the colonists and native tribes, not the least important of which has been the digging of Artesian wells (q.v.). In May, 1856, a 'boring' was commenced in an oasis of the Sahara or desert of the province of Constantine. A civil engineer, a sergeant of Spahis, and a detachment of soldiers of the Foreign Legion, succeeded in bringing to light a splendid fountain or river, yielding not less than 4,010 quarts of water per minute. The work was considered a miracle. From all quarters the Arabs flocked to behold and enjoy it. The native priests blessed it, naming it the 'Fountain of Peace.' Another well was termed the 'Fountain of Benediction.' In the oasis of Sidi-Rached, unproductive for want of water, a well was dug, and, at a depth of 54 metres, yielded 4,300 quarts per minute. It is known as the 'Fountain of Gratitude,' and the enthusiasm excited at its opening was boundless. The idea of providing such wells has rightly been considered 'a stroke of strong political wisdom.'

In spite of frequently-recurring troubles, such as the native rebellion in 1881, the government have largely helped the colonists in establishing banks and the like. In 1881, there were 720 m. of railway, including the line into Tunis; the principal lines are those from Algiers to Oran, and from Constantine to Setif. A telegraph cable was laid in 1870 between Bona and Marseille; there are 5,850 m. of inland telegraphs.

It would be too much to affirm that the colonization of A. has advanced rapidly. About 7,000,000 acres of land are under cultivation, 900,000 being in the hands of European colonists. Of the total population of 2,867,626 (in the three civil departments and the three corresponding military divisions), the French residents were 198,092; Jews, 83,500; Mohammedan natives, 2,477,641; Spaniards, 94,088; Italians, 26,322; English, 14,313; besides smaller numbers of other European nationalities. (The non-French Europeans are 130,000.) The total exports of A. amounted in 1880 to

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\$33,760,000; the imports to \$60,680,000. In the same year, \$3,710,000 represented the value of exports from A. to Great Britain, and \$1,460,000 the imports thence. Barley, iron ore, and zinc are among the exports; but alfa fibre or esparto grass, for making paper, is the staple product; of it, a value of \$2,167,500 was sent to Britain in 1881. Moham-medan schools for instruction in French and Arabic have been established, and are regularly attended by pupils of both sexes. Thus, although progress is slower than might have been anticipated, it is real, and its pace accelerating. When fierce memories have been softened by time, and such atrocities as those of Dahra (q.v.) have been forgotten in the substantial blessings which an enlightened civilization cannot fail to bestow, the presence of the French in A. will cease to be deplored by the natives.

ALGERINE, a. *āl-jě-rīn*, of or belonging to Algiers: N. an inhabitant of; formerly, a pirate.

ALGHERO, *āl-gā'rō*, or **ALGHERI**, *āl-gā'rē*: seaport on the w. coast of the island of Sardinia, 15 m. s.w. from Sassari. It is well defended towards the sea, being built on a rocky point, and surrounded by thick walls, but is commanded by some hills which overhang the town. A. has a cathedral, several convents, a college, and public schools. It exports wine, tobacco, anchovies, skins, coral, bones, etc. It was a favorite residence of Charles V., in whose time it belonged to Spain. Pop. (1881) 8,995.

ALGIERS, *āl-jěrz'* [Arabic, Al-jezira, the island]: cap. of Algeria: built about 935 by an Arab chief. It rises from the sea-shore up the sides of a precipitous hill in the form of an equilateral triangle. The apex is formed by the Casbah, the ancient fortress of the deys, which is 500 ft. above the sea-level, and commands the whole town. The base is a mile in length. The present city may be regarded as divided into two parts: the old, or high town; and the new, or low town. With the exception of some mosques, the latter consists of wharves, warehouses, government houses, squares, and streets, principally built and inhabited by the French; while the former is almost wholly Moorish both in its edifices and inhabitants. The great centre of bustle and activity in A. is the Place Royale—a large oblong space in the centre of the town, planted with orange and lime trees, and surrounded by houses in the European style. Here may be found as motley a crowd as anywhere in the world, denizens of all nations—Arabs, Moors, Jews, French, Spaniards, Maltese, Germans, Italians, etc. The city is intersected by two large parallel streets, Bab-el-Ouad and Bab-azoun, running n. and s. for more than half a mile. They are flanked by colonnades, but are very narrow, and therefore inconvenient for traffic; as promenades, however, nothing could be more agreeable. In 1833, A. had upwards of 100 mosques and marabouts. The mosques are divided into two classes—the djamas, or principal mosques, and the mesjids, or inferior mosques. The marabouts are the tombs and sanctuaries of saints. Everywhere A. wears the aspect of a rising colonial city. Other towns in the province still retain their

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oriental character, with the exception of a few military buildings; but the new town of A. might deceive the traveller into the belief that he is still in Europe, were it not for the throng of swarthy faces he meets. The streets are regular, spacious, and elegant; some of them as handsome as the Parisian Boulevards, and adorned with arcades. The shops, too, are occasionally very good. The houses are in some instances five stories high, which, though it gives a massive and imposing appearance to the city, is yet a very perilous innovation in a place which has suffered dreadfully from earthquakes.

But perhaps greater interest attaches to the old Moorish town, which is connected with the new by a steep, narrow, jagged-looking street called the Casbah, leading down from the fortress of the deys. The houses are square, substantial, flat-roofed; rise irregularly one over the other; and have no windows, but only peep-holes, which are intended to exclude impertinent eyes, and are therefore fortified with iron gratings instead of glass, so that the houses have a very prison-like appearance. Although the streets at first contrast unfavorably with those of Europe, on account of their narrowness, the coolness which this secures soon reconciles the traveller to other inconveniences. The inhabitants have recourse to their flat roofs or terraces in the evening to enjoy the delicious sea-breeze. The French have introduced many useful reforms. There are conduits in every part of the city, public baths, coffee-houses, hotels, omnibuses, etc. The markets are held in the Squares de Chartres, Mahon, and d'Isly. Horse-racing is the great amusement. The Arabs are passionately fond of it. The French have also improved, at great expense and labor, the port, which was in a precarious condition. The town has supreme courts of justice, a chamber and tribunal of commerce, a college, and schools, a Rom. Cath. cathedral and several churches, a French Protestant church, a synagogue, a bazaar for the exhibition of native industry, theatres, and banks.

A., which had been wretchedly misgoverned by a long succession of Turkish deys, fell into the hands of the French in 1830 (see ALGERIA), who swept away every trace of the ferocious despotism that had prevailed. The Turks withdrew in great numbers. Pop. (1881) 70,000 of which only 16,000 are French; while 18,000 are of other European nations, 11,000 are natives, and 7,000 are Jews.

ALGOA BAY, *āl-gō'ā*:- extensive inlet at the e. extremity of the s. coast of Africa, being intersected by the parallel of Cape Town, from which it is distant abt 8 degrees of longitude. Its anchorage is sheltered, excepting on the s.e., the holding-ground being excellent. It receives two rivers, the Sunday and the Baasher. At the mouth of the latter is Port Elizabeth. A. B. is the harbor of the e. province, by far the most flourishing section of the colony; locally memorable as the landing-place, 1820, of the 4,000 persons who were the first British emigration to this once Dutch possession. Since then, the trade of the bay has steadily and rapidly increased. See, further, CAPE OF GOOD HOPE.

ALGOLOGY: see under ALGÆ.

ALGONQUINS—ALHAMA.

ALGONQUINS, *äl-gön'kwinz*: the most prominent of the three aboriginal races that the French found in the great basin of the St. Lawrence. They were then the lords not only of the best part of Canada, but of much adjacent territory to the n. and w. At the present day, the A., as well as the Hurons and the Iroquois, exist, at least within the pale of settlement, only as the shadow of a mighty name, being confined chiefly to several miserable villages, with hardly anything of civilization but its individual helplessness. This deplorable result, from whatever causes, is certainly not to be imputed either to oppression or to indifference on the part of the French, who, politically, religiously, and socially, have always treated the red man with consideration and humanity. See **AMERICA**.

ALGOR, n. *äl'gör* [L.—from *algëo*, I feel cold]: the sense of coldness experienced at the onset of fever. **ALGID**, a. *äl'jid*, chilled with cold; become cold.

ALGORITHM, n. *äl'gō-rīthm* [Sp. *algoritmo*, the science of numbers—Sp. spelling of an Arabic word: Ar. *al*, the: Gr. *arīthmōs*, number]: the art of computation; notation; algebra.

ALGUAZIL, or **ALGUACIL**, n. *äl'gwā-zēl'* [Sp. *alguacil*, a police-officer—from Ar. *al-wazīr*, a vizier, a lieutenant; from *Wasil*, i.e., the 'power' derived from the king]: general name in Spain of the officers intrusted with the execution of justice. There are 'Alguaciles mayores,' who either inherit the office of executing justice in a town as a hereditary right belonging to their families, or are chosen to the office by the municipality; formerly, the name was also given to the officers that executed the sentences or orders of tribunals, such as the tribunal of the Inquisition, and of the various orders of knights. But usually, under the name of A., is understood the 'Alguaciles menores,' or 'ordinarios,' that is to say, the attendants or officers of the courts of justice, gens d'armes, bailiffs—in short, all the inferior officers of justice and police.

ALGUM, n. *äl'gūm* [Heb. *almug*, a corrupted form of *algum*: Sans. *valguka*, sandal-wood]: sandal-wood; a tree, indigenous chiefly on the Malabar coast of India, whose wood is used both medicinally and as a perfume; the *Santālum album*, Ord. *Santālacēæ*; the *almug* or *algum* trees of Scripture are also referred to the *Pterocar'pus santalinus*, or red sandal-wood of India, Ord. *Legumīnōæ*.

ALHA'GI: see **MANNA**.

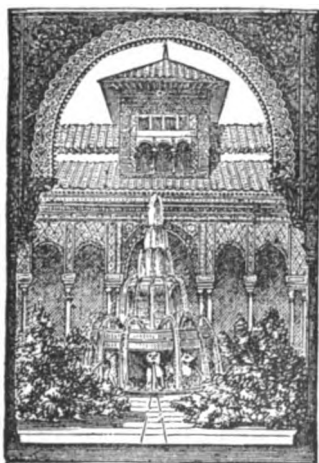
ALHAMA, *ä-lí'mā* [Arab. *the Bath*; the Roman *Astigia Juliensis*]: town of Andalusia, Spain, province of Granada, 25 m. s. w. from Granada. Its situation is extremely picturesque, on the edge of a projecting rock overhanging a deep chasm of limestone hills, through which the river Marchan foams, with mountains in the background rising 8,000 ft. Vineyards and gardens mingled with the houses on the steep slopes add to the interest of the scene. A. is a decayed town, although its warm sulphureous baths are still frequented

ALHAMA—ALHAMBRA.

by visitors in the beginning and end of summer. The Moors derived a large revenue from its baths. It was a famous fortress of the Moors; and its capture, 1482, prepared the way for that of Granada. There are still remains of the Moorish castle and town wall. There are ruins also of a Roman aqueduct: the principal bath still in use is a Moorish edifice; and a smaller one is supposed to be Roman. Pop. 7,758.

ALHAMA: town of Murcia, Spain, 17 m. s.w. from Murcia; celebrated for its warm mineral waters, and resorted to for bathing. It has a ruined castle. Pop. 6,300.

ALHAMBRA, *âl-hâm'brâ*: the fortress which forms a sort of acropolis or citadel to the city of Granada, Spain, and in



Entrance to the Court of the Lions—Alhambra.

which stood the palace of the ancient Moorish kings of Granada. The name is a corruption of the Arabic *Kal'at al hamra*, 'the red castle.' It is surrounded by a strong wall, more than a mile in circuit, and studded with towers. The towers on the n. wall, defended by nature, were used as residences connected with the palace. One of them contains the famous *Hall of the Ambassadors*. The remains of the Moorish palace are called by the Spaniards the Casa Real. It was begun by Ibnu-l-ahmar, and continued by his successors (1248-1348). The portions still standing are ranged round two oblong courts, one called the *Court of the Fish-pond*, the other the *Court of the Lions*. They consist of porticos, pillared halls, cool chambers, small gardens, fountains, mosaic pavements, etc. The lightness and elegance of the columns and arches, and the richness of the ornamentation, are unsurpassed. The coloring is but little

ALHAURIN EL GRANDE—ALI-BEN-ABI-TALEB.

altered by time. The most characteristic parts of the Casa Real have been reproduced in the 'Alhambra Court' of the Crystal Palace at Sydenham, Eng. A great part of the ancient palace was removed to make way for the palace begun by Charles V., but never finished. It is long since any part of the Moorish palace was inhabited; but it is kept in a state of preservation as a work of art, and as a memorial of the tragic legend of the Abencerrages (q.v.).

ALHAURIN EL GRANDE, *ál-ow-rén' èl grán'dā*: town of Granada, Spain, prov. of Malaga; 19 m. w. from Malaga, on the n. side of the Sierra de Mijas, and near the Faala, an affluent of the Guadalherce. It is well built, with a number of squares, wide, well-paved streets, and many fountains. There are remains of a Roman aqueduct and of an Arab fortification. Many of the inhabitants are employed in working the marble, freestone, and granite quarries of the vicinity, and its lead and antimony mines. Pop. 7,514.

ALIA, *á-lē'á*: town of Sicily, prov. of Palermo, 30 m. s.e. from Palermo, picturesquely situated on the crest of a hill, in a mountainous and craggy district, near a torrent called the Fiume Torto. Pop. 6,425.

ALIAS, conj. *ā'li-ās* [law L. *ālias*—from L. *aliūs*, another]: otherwise: N. a false or assumed name; in law, formerly a second writ of execution issued when the first has failed.

ALIBAUD, *á-le-bō'*, Louis: d. 1836, July 11: notorious for his attempt to murder King Louis-Philippe. He was, at the revolution of July, quarter-master in the 15th regt. of the line. Having been degraded subsequently for an accidental brawl in the streets of Strasburg, he demanded his discharge in 1834, and went to live at Perpignan, and then at Barcelona, where, having become a fanatical republican, he returned to Paris with the determination to murder the king. A weariness of life had also seized him, so great that he thought of suicide. A. fired at the king, 1836, June 25, at the moment when, driving through the gate of the Tuileries, he bowed to the national guard as they presented arms; the ball passed close by the king's head. Being immediately seized, he regretted nothing but the failure of his attempt. After a short trial, he was guillotined.

ALI-BEN-ABI-TALEB, *á-lē-ben-á-bē-tá'leb*: the first convert to Mohammedanism, and fourth caliph: d. 660. He was the bravest and most faithful follower of the Prophet, whose daughter, Fatima, he married. Being made caliph in the place of the murdered Othman, he was victorious over the rebels in ninety engagements. He took prisoner Ayesbah, the young widow of Mohammed, and his greatest enemy, in the battle of the Camel—so called because Ayesbah appeared in the field riding on a camel. A. was murdered by a fanatic, and was buried near Kufa, where a monument was erected to him, to which his votaries still go on pilgrimage, and which caused the building of the city Medjed Ali. The religious sect formed by the followers of Ali, called Shiites (q.v.), has spread extensively under that

ALIBI—ALICATA.

name in Persia and Tartary. The descendants of Ali and Fatima, called the Fatimites (q. v.), although much persecuted by the Omniades, have nevertheless ruled on the banks of the Nile and of the Tagus, in West Africa, and in Syria. The best edition of the Proverbs or Maxims ascribed to Ali has been published by Fleischer (Ali's *Hundred Proverbs, Arabian and Persian*, Leip. 1837); Ali's *Ditan*, the most complete collection of his lyrical poems, mostly on religious subjects, appeared, 1840, at Bulak, near Cairo.

ALIBI, n. *ál-i-bi* [Law *L. alibi*, elsewhere—from *L. aliūs*, another]: *a law term*, being elsewhere; being with another person in another place. *A.* is a defense resorted to in criminal prosecutions, when the party accused, in order to prove that he could not have committed the crime with which he is charged, tenders evidence that he was in a different place at the time. When true, there can be no better proof of innocence; but as offering the readiest and most obvious opportunity for false evidence, it is regarded with suspicion. In the case of crimes the place of committing which is immaterial—as, for example, the act of fabricating the plates, or of throwing off the spurious notes, in a case of forgery—a proof of *A.* is of no avail.

ALICANTE, *á-lí-kán'tí*: chief town of a prov. of the same name in Spain; one of the most considerable sea-ports of Spain. It is strongly fortified, and is the staple place for the products of Valencia, especially soda, cotton and linen fabrics, ropes, corn, oil, silk, and the wine of the neighboring district, known as *A.* or *cino tinto*, on account of its dark color. A good deal of this rough, and at the same time sweet, wine is used to 'doctor' thin clarets for the British market. In 1331, the town was besieged by the Moors; and again by the French under Asfeld in 1709. In 1873 it was unsuccessfully bombarded by the Carthaginian insurgents. Pop. 35,000. The PROVINCE of *A.* is formed of parts of the old kingdoms of Valencia and Murcia. Pop. (1877) 408,154.

ALICATA, *á-lè-ká'tá*, or **LICATA**: town of Sicily, prov. of Girgenti; 26 m. s e. from Girgenti. It is most beautifully situated on the sea-coast, at the mouth of the Salsa (anc. *Himera Meridionalis*), one of the largest rivers, if not the largest, in Sicily; its buildings stretch along the shore, and occupy the steep slope of the hill, which is crested by the great old fortress, now indeed of little strength, but of imposing appearance. On the brow of a hill to the w. of the town is the dismantled castle of St. Angelo, said to occupy the site of that in which the tyrant Phalaris kept the brazen bull, his celebrated instrument of torture. *A.* is generally believed to stand on the spot where the ancient *Phintias* was built, B.C. 280, by Phintias, tyrant of Agrigentum, after he had destroyed Gela, the inhabitants of which he transferred hither. The place and immediate neighborhood were the scene of some memorable battles in the wars between the Carthaginians and Sicilians and between the Carthaginians and Romans. In the

ALIDADE—ALIEN.

middle ages, A. suffered severely from the depredations of Barbary corsairs. Its port is quite inferior, the sea being so shallow that only vessels of small size can approach the town; larger vessels are compelled to anchor about a mile from the town, and are loaded and unloaded by the aid of small craft. Yet A. has considerable trade, exporting corn, macaroni, fruit, almonds, pistachio-nuts, sulphur, soda, and wines. Pop. 17,338.

ALIDADE, n. *āl'ī-dād* [mid. L. *alīdāda*, an optical instrument—from Ar. *al-hadūt*, a sort of rule]: the index or ruler which moves about the centre of an astrolabe or quadrant, carrying the sights.

ALIEN, n. *āl'yēn* [OF. *alien* or *allien*, a stranger—from L. *aliēnus*, of another country—from *aliūs*, another]: one born in or belonging to another country; a foreigner; a stranger: **ADJ.** foreign; strange. **ALIENAGE**, n. *āl'yēn-āj*, state of being an alien. **ALIENATE**, v. *āl'yēn-āt*, to transfer anything to another without power of recall; to give to another for good; to estrange; to withdraw love or affection from. **ALIENATING**, imp. **ALIENATED**, pp. **ALIENABLE**, a. *āl'yēn-ā-bl*, that may be transferred or withdrawn. **ALIENABILITY**, n. *āl'yēn-ā-bl'ī-tī*, the being able to be given away. **ALIENATION**, n. *āl'yēn-ā-shūn*, the transfer of anything to another. **ALIENATOR**, n. *āl'yēn-ā-tēr*, one who transfers anything. **ALIENEE**, n. *āl'yēn-ē*, one to whom a thing is transferred. **ALIENISM**, a. *āl'yēn-izm*, the condition of an alien.—**SYN.** of 'alienation': estrangement; abstraction; madness; derangement; insanity; aberration.

ALIEN. The citizen of one state, when resident in another, unless naturalized (see **NATURALIZATION**), is an alien. The condition of an alien does not necessarily result from foreign birth, for the son of a natural-born or naturalized citizen and resident is not an alien, wherever he may be born. The allegiance due by an alien or stranger to the prince in whose dominions he resides is usually called *local* or *temporary allegiance*. It differs from natural allegiance chiefly in this, that whereas natural allegiance is perpetual, and unaffected by change of residence, local allegiance ceases when the stranger transfers himself to another kingdom. See **ALLEGIANCE**. The relations between the United States and Great Britain make it pertinent to note here regarding expatriation, that by British enactments now in force, any British subject who, when in a foreign state and not under any disability, voluntarily becomes naturalized in such state, thenceforth ceases to be a British subject. In the case of a British subject who, before the passing of the act, has been naturalized, in a foreign state, desiring to retain his British nationality, he may do so by making a declaration and taking the oath of allegiance. While resident within the limits of the foreign state, however, he shall not be deemed a British subject unless he has ceased to be a subject of that state. See **NATURALIZATION**.

The right of merchants to reside in England, and to pos

ALIFEROUS—ALIMENT.

sess goods, money, and other personal effects, is recognized by *Magna Charta* (Art. 48). See **CONSPIRACY BILL**.

In the United States, an **A.** is a person born out of the jurisdiction of the United States and not since naturalized in accordance with the constitution and laws. Exceptions to this are children of U. S. ministers at foreign courts. An **A.** cannot in general acquire title to real estate by descent or by mere operation of law; and if he purchase land, he may be divested of the fee under certain procedure; some of the states have statutory exceptions to this rule. An **A.**, though afterwards naturalized, is ineligible to the office of president of the United States, and in some states, notably in New York, to that of governor; and he cannot be a member of congress until the expiration of seven years after his naturalization. He cannot, unless naturalized, exercise any political rights whatever, and therefore cannot vote, fill any office, or serve as a juror. An **A.** has the right to acquire personal estate and make and enforce contracts in relation to the same; he is protected from injuries and wrongs to his person and property, his relative rights and character; he may sue and be sued. An **A.** owes a temporary local allegiance, and his property is liable to taxation. **A.** enemies are incapable during the existence of war to sue, and may be ordered out of the country.

ALIFEROUS, a. *ă-lif'ēr-ūs* [L. *āla*, a wing; *fēro*, I carry]: having wings. **ALIFORM**, a. *ăl'i-fawrm* [L. *forma*, shape]: wing-shaped.

ALIGARH: see **ALLYGURH**.

ALIGHT, v. *ă-lit'* [AS. *alihtan*, to light on anything, especially on the ground—from *lihtan*, to alight—*lit.*, to remove a burden from]: to get or come down; to settle on, as birds. **ALIGHT'ING**, imp. **ALIGHT'ED**, pp.

ALIGN, v. *ă-lin'* [F. *aligner*, to draw out by line—from *ligne*, a line: L. *ad*, *linēu*, a line]: in *mil.*, to place two objects, or two bodies of men, in the same straight line. **ALIGNEMENT**, or **ALIGNMENT**, n. *ă-lin'mēnt* [F. *alignement*, a row, a level]: the act of adjusting to a line; the position of a body of men in a straight line: a supposed line to preserve a fleet, or part of one, in its just direction; measurement by straight lines as in the ground-plan of a railway.

ALIKE, a. ad. *ă-lik'* [a shortened form of AS. *anlike* or *onlike*: AS. *on*, on; *lic*, like (see **LIKE**)]: the same in appearance; not different; in the same manner or degree.

ALIMENT, n. *ăl'i-mēnt* [F. *aliment*, food—from L. *alimētum*—from L. *ālo*, I nourish, Goth. *alan*; Icel. *ala*, to nourish]: that which nourishes; food; nourishment; support: V. to grant means of support; to maintain. **ALIMENT'ING**, imp. **ALIMENT'ED**, pp. **ALIMEN'TAL**, a. supplying food that can nourish. **ALIMEN'TALLY**, ad. *-lī*. **ALIMENTARY**, a. *ăl'i-mēn'tēr-ī*, having the property of nourishing; in *anat.*, connected with the introduction, the assimilation, and evacuation of food, as the *alimentary canal*. **ALIMEN'TARINESS**, n. **ALIMENTA'TION**, n. *-tā'shūn*, the

ALIMENT—ALIMENTARY CANAL.

power of affording nourishment; the state of being nourished. ALIMONY, n. *ăl'î-mŏn-î*, the sum allowed for the support of a wife who is separated from her husband. ALIMEN'TIVENESS, n. *-tîv-nēs*, in *phren.*, the organ which creates a desire for food and drinks, or which gives the pleasure arising from eating and drinking.

ALIMENT, in Law: a technical term not known in the law of England; but in the law of France, and of Scotland, retaining the meaning which it had in the Roman law (*Dig.* 34, 1, 6); signifying the food, dwelling, clothing, and other things necessary to the support of life, or such money as may be judicially demanded in lieu of them.

ALIMENTARY CANAL: in Mammalia; that portion of the digestive apparatus through which the food passes after mastication. It is lined by a mucous membrane, which extends from the lips to the anus, being modified in each region. See MUCOUS MEMBRANE. The A. C. really begins at the back of the mouth, in the lower part of the bag called the pharynx, which communicates with the nostrils above, and the gullet or œsophagus below, and also with the mouth and the larynx. The pharynx is surrounded by three muscles, the constrictors, which grasp the food, and force it into the next portion of the A. C., the œsophagus. This is a tube composed of an outer layer of longitudinal muscular fibres, and an inner of circular, which extend down to, and spread out upon, the stomach. These fibres, by a series of peristaltic contractions, carry the morsel of food along into the stomach. In vomiting there is a reversal of these actions, which ruminating animals can accomplish at will. The œsophagus passes through an opening in the diaphragm, and joins the stomach, which is a pouch curved with the concavity upwards, expanded into a *cul de sac* on the left side (the cardiac extremity), and gradually narrowed to the right or pyloric end. It consists of muscular fibres continuous with those of the œsophagus, which become thicker towards the pylorus. Its external surfaces are covered by peritoneum, and it is lined by a thick soft mucous membrane, which, when the stomach is empty, lies in folds. Between the muscular and mucous layers is a fibrous layer, in which the blood-vessels lie before they pass into the mucous layer. See STOMACH. At its pyloric or left extremity the stomach communicates with the small intestine, which is about 20 ft. in length, becoming gradually narrower towards its lower end, and arranged in numerous convolutions, which occupy the middle of the abdominal cavity, and are kept in position by the peritoneum, which attaches them to the back of the abdomen.

The small intestine is subdivided into three parts. The first 10 inches from the stomach is the duodenum, into which open the duct of the pancreas and the common bile duct; of the remainder, the *jejunum* includes about two-fifths, and the *ileum*, three-fifths. The differences between these last two are not visible externally, but consist in modifications of their internal structure. The tube consists of

ALIMONY—ALI PASHA.

peritoneum, longitudinal and circular muscular fibres, a fibrous layer, and the mucous membrane. See **INTESTINES, SMALL**.

The ileum ends at the right iliac region in the large intestine, which is from 5 to 6 ft. in length. It begins at the pouch called the blind gut (caput cæcum coli) or cul de sac (see **CÆCUM**) which has a small worm-like appendage (appendix vermiformis); a double valve guards the opening of the small into the large intestine. The colon passes upwards on the right side to below the liver (ascending colon), then crosses from the right hypochondrium across the upper umbilical region to the left hypochondrium (transverse colon), then descends to the left iliac fossa (descending colon), when it bends twice like an S (sigmoid flexure), and then joins the *rectum* at the left margin of the true pelvis. The colon is distinguished by its pouched or sacculated appearance, the sacs being separated by three flat bands of longitudinal muscular fibres. The peritoneum covers it only in parts. See **COLON**. The rectum is not sacculated, but its muscular coat becomes much thicker; at its lower end the longitudinal fibres stop, but the muscular become more numerous, forming the internal sphincter muscle. The rectum is not straight, but takes a curved course.

The A. C. thus consists of a continuous passage lined by mucous membrane, which rests on a fibrous and muscular basement. Its length is generally about five or six times the length of the body, or about 30 ft. It begins below the base of the skull, and passes through the thorax, abdomen, and pelvis, and consists shortly of the mouth, pharynx, œsophagus, stomach, small intestine, and large intestine. The above describes the A. C. in human anatomy; its parts are variously modified in different animals. See articles on its subdivisions.

ALIMONY, *âl'î-mŏn-î* (see **ALIMENT**), in Law; the maintenance or support which a husband is bound to give to his wife after separation from her; or the support which either father or mother is bound to give his or her children, though this is usually called maintenance. The causes for which A. is granted to a wife are desertion, or cruelty on the part of the husband, and divorce. It is granted in proportion to the wants of the person requiring it, and the circumstances of those who are to pay it. A. is allowed to the wife *pendente lite*, almost as a matter of course, whether she be plaintiff or defendant, for the reason that she commonly has no other means of living.

ALI PASHA, *â'î lê pâ-shâ'*: 1741-1822, Feb. 5; b. Tepelen, a small place at the foot of the Klissoura Mts., Albania; one of the most ferocious and unscrupulous men that even the East has produced. He was descended from an Albanian pasha, who perished at the siege of Corfu, 1716. His mother was a vindictive and merciless woman, who never hesitated to employ the most revolting means of accomplishing her purposes. Having lost his father, a comparatively quiet and enlightened man, his education necessarily

ALI PASHA.

devolved upon her; and she did not fail to inspire him with her remorseless sentiments. His youth was passed in extreme peril and hardship, for the neighboring pashas combining, had robbed his father of nearly all his possessions, in the effort to recover which, young Ali was repeatedly defeated, and at last had to betake himself to the mountains, and even to pledge his sword to save himself from dying of hunger. These calamities only nurtured a natural boldness and cunning, afterwards developed in a variety of qualities, such as subtlety, dissimulation, foresight, treachery, vigor, and diabolical cruelty. It is said that the change in his fortune arose from his having accidentally discovered a chest of gold, with which he raised an army of 2,000 men, gained his first victory, and entered Tepelen in triumph. On the very day of his return, he murdered his brother, and then imprisoned his mother in the harem on the charge of poisoning him, where she soon after died. He next reconciled himself to the Porte by helping to subdue the rebellious vizier of Scutari; and thus acquired not only the lands that had been wrested from his father, but likewise several Greek cities. He also attacked and slew (with the permission of the sultan) Selim, pasha of Delvino, and, as a reward, was appointed lieutenant to the new pasha of Derwend; but instead of attending to the security of the high roads (which was his office), he rendered them more insecure than ever by participating in the plunder which the *klephtis* (robbers) were allowed to make. The result was his deposition by the Porte; but he speedily purchased back its favor, for he was a master-hand at bribery. Shortly after this, he acquired a high reputation as a soldier, and did such good service to the Turks in their Austro-Russian war of 1787, that he was named pasha of Trikala in Thessaly; at the same time he seized Janina or Joannina, of which he got himself appointed pasha by the instrumentality of terror, a forged firman, and bribery. It must be admitted that, as a ruler, he now displayed some good qualities. He swept his old friends, the robbers, from the mountain roads, incorporated them into military troops, quelled the wretched factions that prevailed, and everywhere, by the vigor and vigilance of his administration, introduced order in the place of anarchy.

Soon after this, he entered into an alliance with Napoleon Bonaparte, who sent him engineers. When Bonaparte was defeated in Egypt, Ali, 1798, took the places in Albania possessed by the French. After a three years' war, he subdued the Suliotes, for which the Porte promoted him to be gov. of Roumania. About this time, he revenged upon the inhabitants of Gardiki an injury done to his mother forty years before, by the murder of 739 male descendants of the original offenders, who themselves were all dead.

In the interior of his dominions, Ali maintained strict order and justice. Security and peace reigned, high roads were constructed, and industry flourished, so that the European travellers, with whom he willingly held intercourse, considered him an active and intelligent governor.

ALIPED—ALISMACEÆ.

From the year 1807, when he once more entered into an alliance with Napoleon, the dependence of Ali on the Porte was merely nominal. Having failed, however, in his principal object, which was to obtain, at the peace of Tilsit, through the influence of Napoleon, Parga, on the coast of Albania, and the Ionian Islands, he entered into an alliance with the English, to whom he made many concessions. In return for these, they granted Parga, nominally to the sultan, but really to Ali. As he now considered his power to be securely established, he caused the commanders of the Greek *Armatoles* (or Greek militia), who had hitherto given him assistance, to be privately assassinated one by one, while he also put to death the assassins, to save himself from the suspicion of having been their instigator. The Porte at length determined to put an end to the power of this daring rebel; and in 1820, Sultan Mahmoud sentenced him to be deposed. A. resisted for a time several pashas that were sent against him; but at last surrendered, on the security of an oath that his life and property would be granted him. Regardless of this, he was put to death. A. had great natural gifts, but a character of the worst description. He never scrupled to use any means, provided it speedily secured his end. Like many other half-civilized monarchs and chiefs within the sphere of European influence, he was keenly alive to whatever transpired among the powers of Christendom. Though utterly illiterate himself, he had all the foreign journals translated and read to him. He watched every political change, as if aware that the interests of his little region depended for their prosperity on the West, and not on the East; and made friendly advances to both the French and the English, recognizing that the practical dominion of the world had passed from the Crescent to the Cross.

ALIPED, n. *āl'i-pēd* [L. *āla*, a wing; *pēs* or *pēdem*, a foot]: an animal, such as the bat, whose feet, connected by a membrane, serve as wings.

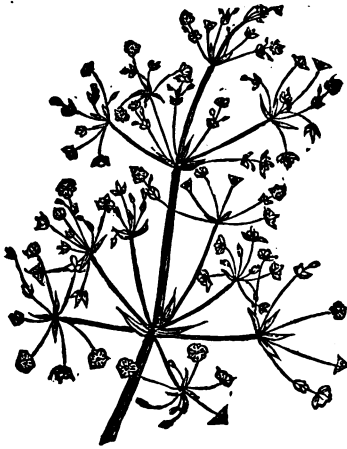
ALIQUNT, a. *āl'i-kwānt* [L. *aliquantum*, a little]: that does not divide exactly.

ALIQOT, a. *āl'i-kwōt* [L. *aliquot*, some—from *alius*, another; *quot*, how many]: that measures or divides exactly. One quantity or number is said to be an *Aliquot Part* of another, when it is contained in this other an exact number of times without remainder: thus 2, 2½, 4, and 5 are A. parts of 20, being contained in it 10, 8, 5, and 4 times. The consideration of A. parts occurs chiefly in the rule of *Practice*. Suppose we have to find the price of a number of articles at 6½ cents; since ½ cent is the eighth part of 6 cents, to the price at 6 cents, add ⅛ of that price.

ALISMA'CEÆ: a natural order of monocotyledonous plants, consisting of herbaceous plants either floating in water or growing in swamps. The leaves have parallel veins, even if expanded into a broad blade. The flowers are in umbels, racemes, or panicles; the sepals 8, the petals 8, the number of stamens definite or indefinite. The ovaries are several, superior, one-celled, distinct or united; the styles

ALISON.

and stigmas equal to them in number. The fruit is dry, with one or two seeds in each carpel; the seeds exalbuminous.



Water Plantain (*Alisma plantago*).

There are about fifty known species, excluding the natural order *Juncagineæ*, very nearly allied, and included in this by some botanists. The species of both orders are chiefly natives of the northern parts of the world. **WATER PLANTAIN** (*Alisma plantago*) is a very common plant in stagnant waters in Britain, and not without beauty. Its leaves, which have long footstalks, shoot up above the water, and among them but far above them arises the erect scape of leafless stem, divided into slender

whorled branches and branchlets, among which the little flowers appear to lie thinly scattered. The fleshy rhizome, or root-stock, is eaten by the Calmucks, after it has been deprived of its acridity by drying. The corms of the **ARROWHEAD** (*Sagittaria*) possess somewhat similar properties. See **ARROWHEAD**.

ALISON, *äl'i-sŏn*, **ARCHIBALD**: 1757-1839; b. Edinburgh: studied at the Univ. of Glasgow, afterwards at Oxford. He took orders in the Church of England in 1784, and among other preferments, a prebendal stall in Salisbury, and the perpetual curacy of Kenley, Shropshire. From 1800, he ceased to reside in England, and officiated in the Episcopal chapel in Cowgate, in his native city, where he died. A. is known principally by his *Essays on the Nature and Principles of Taste*, pub. 1790. The second edition, 1811, gave occasion to an article by Jeffrey, in the *Edinburgh Review*. It has since gone through several editions and been translated into German and French. The *Essays* advocate what is called the 'association' theory of the sublime and beautiful, and are distinguished for their pleasing and elegant style. See **ÆSTHETICS**.

ALISON, Sir **ARCHIBALD**, Bart: 1792-1867; b. Kenley, Shropshire; younger son of Archibald, the author of the *Essays on the Nature and Principles of Taste*. At Edinburgh Univ. he obtained the highest honors in Greek and mathematics. He became a member of the Scottish bar in 1814. He was advocate-depute, 1822-30. His *Principles of the Criminal Law of Scotland*, pub. Edinburgh, 1832, is considered a standard work. In 1833, he pub. a sequel to the work, entitled *The Practice of the Criminal Law*. In

ALISON—ALKALI.

1884, he was appointed sheriff of Lanarkshire; in 1845, the students of Aberdeen elected him 'Lord Rector' of Marischal Coll.; in 1851, he received the same honor from Glasgow Univ., and subsequently the title of D.C.L. from the Univ. of Oxford. He received a baronetcy in 1852. His great work is *The History of Europe during the French Revolution* (10 vols. 8vo, 1839-42), a narrative of events, 1789-1815; a continuation, under the title of *The History of Europe from the Fall of Napoleon to the Accession of Louis Napoleon* (9 vols.), was finished in 1859. He published also, *Life of the Duke of Marlborough*, *The Principles of Population*, etc., *Free Trade and Protection, England in 1815 and 1845*, besides contributing for many years to *Blackwood's Magazine* a series of tedious articles on tory politics. A.'s chief production, *History*, etc., is a work of immense industry, of very respectable accuracy, written with great animation and some candor, but its style is excessively wordy, and even when animated is never picturesque. A. shows lack of insight into events or characters. Yet the work had great popularity, has gone through numerous editions, and has been translated into German, French, Arabic, and other languages. See his autobiography, 2 vols. 1882.

ALISON, WILLIAM PULTENEY, M.D.: d. 1859, Sept.; elder bro. of the historian: political economist, physician, and prof. of the practice of medicine, in the Univ. of Edinburgh. A pamphlet published by Dr. A., 1840, to show how the inadequate provision for the poor in Scotland led to desolating epidemics, was the principal means of bringing about an improved poor-law for that country. His other writings are—*Outlines of Physiology*, and *Outlines of Pathology and Practice of Medicine*; also, *Dissertation on the Reclamation of Waste Lands* (Edinb. 1850).

ALISPHENOID, a. *āl'i-sfē'noyd* [L. *ala*, a wing; *sphenoides*, the sphenoid bone]: a bone of the skull which in man is united to form the great wing of the sphenoid bone.

ALIVE, a. *ā-līv'* [AS. *a*, on; Goth. *līban*, to live: AS. *on-līfe*, alive]: endued with life; not dead; in existence: sprightly; active; easily impressed.

ALIWAL, *āl-e-wāl'*: village near the s. bank of the Sutlej; not far from the town of Loodianah, lat. 30° 57' n., long. 75° 36' e.; scene of a fierce conflict between the British and Sikh forces, 1846, Jan. 28. The latter having crossed the river for the purpose of foraging, or otherwise obtaining supplies, had threatened Loodianah, when they were attacked by Sir Harry Smith, defeated, and driven back with great slaughter. The victory of A. is said by military critics to have been 'without a fault.'

ALIZARINE, n. *ā-līz'ā-rīn* [*alizari*, anc. name for the plant madder]: a coloring principle in madder. See **MADDER**.

ALKAHEST, n. *āl'kă-hĕst*: see **ALCAHEST**; **ALCHEMY**.

ALKALI, n. *āl'kă-lī*, or *-lī* plu. **ALKALIES**, *-līz* or *līs* [Ar. *alqali*, the salt of ashes—from *al*, the; *qali* or *kali*, the glass-wort, a species of *Salicornia*, from which soda was first ob-

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tained]: a substance, such as soda or potash, which neutralizes the action of an acid, and changes vegetable blues into green, and yellows into brown. **ALKALINE**, a. *äl'kü-lin*, having the properties of an alkali; the **ALKALINE EARTHS**, are *lime*, *magnesia*, *baryta*, and *strontia*. **AL'KALIN'ITY**, n. *ä-ti*, the quality which constitutes an alkali. **ALKALIZATION**, n. *äl'käl-ä-zü'shün*, the making a body to have the properties of an alkali. **ALKALIZABLE**, a. *äl'kü-tiz'ä-bl*, that may be changed into an alkali. **ALKALESCE**, a. *äl'kü-lës'ënt*, tending to be, or slightly alkaline. **ALKALESCENCE**, n. *äl'kü-lës'ëns*, also **AL'KALESCENCY**, n. *-s*, the tendency to become possessed of the properties of an alkali. **ALKALIFY**, v. *äl'käl'ï fï*, to convert into an alkali; to become alkaline. **ALKALIFYING**, imp. **ALKALIFIED**, pp. *äl'käl'ï fid*. **AL'KALIF'ABLE**, a. *fï'ä-bl*, capable of being converted into an alkali. **ALKALIGENOUS**, a. *äl'kü-lj'ë-nūs* [*alkali*; Gr. *gennāō*, I generate]: producing alkali. **ALKALIMETER**, n. *äl'kü-lim'ë-tër* [*alkali*; Gr. *metron*, a measure]: an instrument used in testing the strength of alkalies. **ALKALIM'ETRY**, n. *-tri*, the art of finding the strength of alkalies. **ALKALOID**, n. *äl'kü-loyd* [*alkali*; Gr. *eidos*, form, resemblance]: a substance having alkaline properties in a slight degree; the alkaline principle of a vegetable.

ALKALIES (see **ALKALI**). The A. proper are four in number—potash, soda, lithia, and ammonia. The first three are oxides of metals: the last is a compound of nitrogen, hydrogen, and oxygen, and, being in the form of a gas, is called the volatile alkali. Potash, being largely present in the ashes of plants, is called the vegetable alkali; and soda, predominating in the mineral kingdom, is designated the mineral alkali. The *alkaline earths*, as they are called—lime, magnesia, baryta, and strontia—are distinguished from the former by their carbonates not being soluble in water. The distinguishing property of A. is that of turning vegetable blues green, and vegetable yellows reddish-brown. Blues reddened by an acid are restored by an alkali. The A. have great affinity for acids, and combine with them, forming salts, in which the peculiar qualities of both alkali and acid are generally destroyed; hence they are said to neutralize one another. In a pure state, alkalies are extremely caustic, and act as corrosive poisons. Combined with carbonic acid, especially as bi-carbonates, they are used to correct acidity in the stomach; but injudicious and continued use of them is attended with great evil.

ALKALIMETER, *äl'kü-lim'ë-tër* (see **ALKALI**). Commercial potash and soda always contain greater or less quantities of foreign substances, such as sulphate of potash, common salt, silicates, oxide of iron, water, etc., which diminish the percentage of real alkali in a given weight. It is important, then, for the manufacturer to have some simple and ready means of determining the proportion of pure carbonate of potash or soda contained in any sample, that he may be able to judge of its value. Ordinary chemical analysis takes too much time. The A. serves this purpose. It consists of a graduated glass tube, filled with di

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luted sulphuric acid, and containing as much absolute sulphuric acid as would neutralize a given weight, say 100 grains, of carbonate of potash. One hundred grains of the article to be judged of is then dissolved in water, and as much acid is gradually added to it from the tube as to neutralize the solution, that is, take up all the alkali. The application of colored tests determines when the neutralization is complete. The purer the article, the more of the acid will be required; and if the tube, which is divided into 100 degrees, has been emptied to the 80°, the impure article contains 80 per cent. of pure carbonate of potash.

This method of determining the strength of alkalies is called the *alkalimetry process*; but the instrument is not confined in its use to the estimation of the strength of alkaline substances. It is likewise employed in the determination of the strength of acids, such as sulphuric acid, hydrochloric acid, nitric acid, and acetic acid (vinegar). For this end, the graduated instrument is charged with a solution of an alkali of known strength, such as a given weight of crystallized carbonate of soda (washing soda), dissolved in water, and according to the number of divisions of the liquid poured from the A., the strength of the acid into which the alkaline liquid has been decanted, is calculated. The latter application of this instrument is called *acidimetry*. Again, the same graduated glass tube has been recently employed in many other ways, such as the determination of the strength of a solution of silver, by charging the instrument with a known or standard solution of common salt; and for this purpose it is used largely by the assayers to the Royal Mint, and other metallurgic chemists. This mode of analysis is every day becoming of more and more importance, and in fact, has given rise to a new department of analytical chemistry, which has been designated *volumetric analysis* (q.v.).

ALKALOIDS, *ál'kü-loýdz* (see **ALKALI**): a class of substances discovered by modern chemistry. They are divided into two classes—*natural* and *artificial*. The natural A. are found in plants and animals, and are often designated *organic bases*. Those obtained from plants are likewise called *vegeto-alkalies*. They are composed essentially of carbon, hydrogen, and nitrogen; besides which, the greater number contain oxygen. The A. have generally an energetic action on the animal system, and hence are frequently employed in small doses as medicine; while in comparatively large doses they are powerful poisons. They have, though in low degree, the characteristic alkaline properties of vegetable colors, etc.; have generally a bitter, acrid taste; and form the active principles of the plants in which they are found. Such are morphia, codeine, and narcotine, found in opium; quinine, and cinchonine, in cinchona bark; strychnine, in nux-vomica; hyoscyamine, in henbane; nicotine, in tobacco; piperine, in black pepper; caffeine or theine, in coffee and tea, etc.

The animal A. are few in number, the more important being urea, found in the urine of the mammalia; and kreatine and kreatinine, two of the constituents of the juice of

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flesh. The artificial A. are those organic bases which are not found in any known plant or animal, but of which chemists in later researches have contrived to form a large number. As the artificial A. do not differ essentially from the natural A. in composition, structure, or properties, it is confidently believed that the day is not distant when all of the A. will be prepared artificially; indeed, recently several of the natural A. have been manufactured on the small scale without the intervention of the living plant or animal. For instance, urea can be formed from the simplest form of dead organic nitrogenous matter.

ALKANET, n. *āl'kū-nēt* (*Anchusa*), [Ar. *alkanah*, a reed]: a genus of plants belonging to the natural order *Boraginææ*, having a 5-partite calyx, a funnel-shaped or salver-shaped corolla, with five scales closing its mouth, five stamens, an obtuse stigma, and ovate achænia, which are surrounded at the base by a plaited tumid ring. The species are herbaceous plants, rough with stiff hairs, and having lanceolate or elongato-ovate leaves, and spike-like, bracteated, lateral and terminal racemes of flowers, which very much resemble those of the species of *Myosotis*, or Forget-me-not.—The **COMMON A.** (*A. officinalis*) grows in dry and sandy places, and by waysides in the middle and n. of Europe. It is rare and a very doubtful native in Britain. The flowers are of a deep purple color. The roots, leaves, and flowers were formerly used in medicine as an emollient, cooling, and soothing application.—The **EVERGREEN A.** (*A. sempervirens*) is also a native of Europe, and a doubtful native of



Alkanet (*Anchusa officinalis*).

Britain, although not uncommon in situations to which it may have escaped from gardens, being often cultivated for the sake of its beautiful blue flowers, which appear early in the season, and for its leaves, which retain a pleasing verdure all winter. It is a plant of humble growth, rising only a few inches above the ground.—A number of other species are occasionally seen in flower-borders.—*A. tinctoria*, to which the name A. or **ALKANNA** (Arab. *Al-chenneh*) more strictly belongs, is a native of the Levant and of the s. of Europe, extending as far n. as Hungary. The root is sold under the name of A. or Alkannaroot; it is sometimes cultivated in England; but the greater part is imported from the Levant or the s. of France. It appears in commerce in pieces of the thickness of a quill or of the finger, the rind blackish externally, but internally of a beautiful dark-red color, and adhering rather loosely to the whitish heart. It contains chiefly a resinous red coloring matter, called **Alkanna Red**, *Anchusic Acid*, or *Anchusine*. The color which it yields is very beautiful, although not very durable. It is readily soluble in oils, and is therefore in very

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general use among perfumers for coloring oils, soaps, pomades, lip-salves, etc. It is extensively used for coloring spurious port-wine. It also enters into compositions for rubbing and giving color to furniture. Its solutions in oils and alcohol have almost a carmine red color, although to water it gives only a brownish hue. It combines with alkalis forming blue solutions; with chloride of tin, it becomes of a carmine red; with acetate of lead, blue; with sulphate of iron, dark violet; with alum, purple; and with acetate of alumina, violet. — VIRGINIAN A. (*A. Virginica*) yields a similar coloring matter, and is used in the same way.

ALKANNA, *āl-kān'nū* (*Al-henna*): name given to a coloring-matter prepared from the leaves of *Lawsonia inermis*, and used by oriental ladies to give a red color to their nails. See HENNA.

ALKARSIN, n. *āl-kār-sīn* [Ar.]: the oxide of kakodyl: a liquid obtained by heating white arsenic with acetate of potash, whose fumes are fearfully offensive, and a deadly poison.

ALKERMES, n. *āl-kēr'mēz* [Ar. *al, kermes*, reddish grains of certain oaks]: a confection whose principal ingredient is the kermes berries; a compound cordial.

ALKMAAR, *ālk-mār*: old town in the province of N. Holland, Netherlands; on the Helder canal, 20 m. n.n.w. of Amsterdam. It is well built, has very clean streets, and is intersected by broad canals. The ancient bulwarks have been turned into promenades. It has a Gothic town-house; the church of St. Lawrence dates from the 15th c. A. has manufactures of sail-cloth, sea-salt, soap, vinegar, and leather, and trade in cattle, grain, butter, and especially cheese—of which A. exports enormous quantities. A. held out against the Duke of Alba, who besieged it in 1578. Here, 1799, Oct. 18, the Duke of York signed a not very honorable capitulation, after his Russo-British army had been twice defeated by the French general Brune. Pop. 18,000.

ALKORAN, n.: see ALCORAN—but the spelling with *k* should be preferred. AL'KORAN IC, a. pertaining to. AL'KORAN'IST, n. one who.

ALL, a. *awl* [AS. *eall*: Goth. *alls*: Icel. *allr*—from *d* or *ei*, aye, ever]: the whole; every one: N. the whole; the entire thing.

ALL, ad.: when used as the first part of a compound, *all* generally denotes *wholly, completely, or perfectly*—as, ALL-ABHORRED, detested by all. ALL-ADMIRING, wholly admiring. ALL-AMOROUS, wholly in love. ALL-BEARING, bearing everything; bearing perfectly. ALL-CHANGING, perpetually changing. ALL-CONQUERING, subduing everything. ALL-DISGRACED, completely disgraced. ALL-DREADED, dreaded of all. ALL-ESSENTIAL, altogether essential; without which wholly worthless. ALL-SEEING, seeing everything; wholly seeing. ALL ALONG, continually; regularly. IT IS ALL ONE, OR ALL'S ONE, it makes little or no difference. ALL THAT, collection of similar

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things or occurrences; et cætera. **ALL IN ALL**, everything. **ALL-FOOLS'-DAY**, the first of April. **ALL-FOURS**, a game at cards; moving on the legs and arms. **ALL-HAIL**, a phrase of salutation expressive of a wish for health. **ALL-HEAL**, name of a plant, so named from its supposed medicinal properties; the *Vale'rian officinālis*, Ord. *Vale'rianacæa*; also the name of the *Stachys palustris*, Ord. *Labiātæ*. **ALL-MERCIFUL**, of perfect mercy. **ALL-HALLOW DAY**, n. [*AS. halgian*, too keep holy]: All-Saints'-day, 1st November. **ALL-HALLOW-TIDE**, n. the time near to 1st November. **ALL-SAINTS'-DAY**, 1st day of November. **ALL-SOULS'-DAY**, 2d of November. **ALLSPICE**, n. Jamaica pepper or pimento—*which see*.

ALLA BREVE, *āl'lā brēv* or *āl'lā brā-vā*, in Music. In old music, the breve [*O*] as the longest note, was equivalent to our semi-breve, *O*, the longest note commonly used in modern music. Consequently, the minims anciently used were equivalent to our crotchets. Music written with four minims in a bar is signed *Alla Breve*, which implies that the four minims must be sung as four crotchets. The difference between the two styles of writing is merely formal. Other signs for A. B. time are— $\frac{1}{2}$, 2, or C, or *Alla Capella*.

ALLAH, n. *āl'lā* [compounded of the article, *al* and *ilāh*—i.e., 'the worthy to be adored']: the Arabic name of the one God, to whose worship Mohammed pledged his followers; and the word has passed into all languages wherever the name of Islam has been heard. The notions of the character of this God given by Mohammed in the Koran bear traces of Jewish and Christian influence, and are much superior to the national superstitions and impassioned fancies of the orientals in general. Above all other things, Mohammed inculcated the unity of God in the strictest sense, in opposition not only to idolatry, but also in some points to the belief of the Jews and Christians, as is seen in the following formula or creed: 'There is no God but *the* God (Allah). This only true, great, and highest God has his existence of himself, is eternal, *not begotten, and begets not*, suffices for himself, fills the universe with his infinity, is the centre in whom all things unite, manifest and concealed, Lord of the corporeal and spiritual worlds, creator and ruler, almighty, all-wise, all-good, merciful, and his decrees are irrevocable.' Mohammed has ventured on very bold illustrations of these attributes for popular representation, as in the passage of the Koran where he says: 'If all the trees on earth were pens, and if there were seven oceans full of ink, they would not suffice to describe the wonders of the Almighty.' The different attributes of God, divided under his 99 names, and connected together in a certain order in a litany, form the rosary of the Mohammedans, which concludes with the name A., as the 100th, including in itself all the former epithets.

ALLAHABAD, *āl'lā hā-bād'*: a British dist. in the n.w. Provinces of India, between lat. 24° 49', 25° 44'; long. 81° 14', 82° 26'; 85 m. in length by 50 in breadth; 2,833 sq. m. The surface is in general level, with a slope toward the s.e.

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The principal rivers are the Ganges (flowing partly within A., and partly dividing it from Oude and Mirzapore), and its great affluent the Jumna, which joins it at the city of A. The district is well watered, and vegetation is luxuriant. The native agriculture at the end of the last century was singularly rude and deficient, but the British residents have done much for its improvement. The principal products are cotton and salt; and there is a brisk transit-trade by the Jumna in cotton, indigo, and sugar. Pop. (1881) 1,474,106, almost wholly Hindus; the Mohammedans being about 200,000. The district is mainly agricultural, very little tillable land being left uncultivated.

The 'Division' of ALLAHABAD comprehends the districts of Cawnpore, Futtehpur, Banda, Humeerpore, Jaunpur, and A. It is bounded n. by Oude and Agra, e. by Behar, s. by Gundwana, and w. by Malwa. Its length is about 270 m. breadth, 120; 13,746 sq. m.; pop. 5,754,855. It comprises one of the most populous and productive territories in India.

ALLAHABAD ['city of God']: seat of the government of the n.w. Provinces of British India, occupies the fork of the Ganges and Jumna, lat. 25° 26' n., long. 81° 85' e., thus forming the lowest extremity of the extensive region which, as lying between those natural boundaries, is distinguished as the *Doab*, or the country of *Two Rivers*—an analogous term to the *Punjab*, or the country of *Five Rivers*. The situation of A., at the confluence of the holy streams of India, besides giving the city its sacred appellation, has rendered it a much frequented place of pilgrimage for the purposes of ablution, some of the devotees sinking themselves with weights to rise no more. In point of appearance, A. was scarcely worthy of its character and renown. Except a few ancient monuments of costly, elaborate, and tasteful workmanship, the native part of the city consists of mean houses and narrow streets. As in the towns generally of India, the European quarter, on the whole, is vastly superior. Its nucleus appears to have been the native fort, which, on the e. and s., rises directly from the banks of both rivers, while towards the land its artificial defenses, of great strength in themselves, are not commanded from the neighborhood by any higher ground. This citadel, described by Heber as having been at one time 'a very noble castle,' has lost much of its romance by having had its lofty towers pruned down to bastions and cavaliers. The Europeans of the garrison occupy well-constructed barracks. Beyond the fort are the cantonments for the native troops. In connection with these are numerous villas and bungalows, few other spots in India having such handsome buildings of this kind; and these showy retreats are rendered still more attractive by avenues of trees which wind between them and connect them with the fort, the city, and several of the circumjacent localities.

The summer of 1857 brought disaster to A. On June 6 the insurrection, which had begun at Meerut, May 10, extended to A. Though the Europeans continued to hold the fort, yet the mutineers were, for some days, undisputed masters of all beyond; and between the ravages of the

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marauders and the fire of the garrison, the city soon became little better than a heap of blackened ruins. In the history of this fearful outbreak, A. must be 'a magic word' to every English ear, as the spot where the fiery Neill entered on his brief career of glory. It was here, also, that Lord Canning, after the close of the mutiny, distributed £3,000,000 in presents to the chiefs who had remained loyal. But although situated thus in the heart of the outbreak, and feeling its disastrous effects, the city possesses natural advantages that have allowed it to recover. Its position at the confluence of the holy rivers, which has so long made it a centre of superstitious reverence and worship, now renders it naturally a centre of commerce and civilization, and has been fully appreciated by government. It commands the navigation both of the Ganges and of the Jumna. It is on the direct water-route between Calcutta and the Upper Provinces; and is a main station, not only on the Grand Trunk road, but also on the East Indian railway. New buildings, many of them with great architectural merits, have accordingly sprung up with rapidity since 1857; the most noteworthy buildings being still, however, the Great Mosque and the Sultaun Khossor's Caravanserai—a fine cloistered quadrangle. The fort is of red stone, and is approached by a very handsome gate: it contains the palace or residency, and the Gada pillar or Club of Bhin Sen, in the Chalee Satoom Temple, which is said to communicate with Benares by a subterranean passage, through which flows a third holy river, the Sereswati, visible only to the eye of faith. A. contains a college, hospital, theatres, bazaars, etc. So many poor pilgrims throng the city, especially at the time of the Great Fair, which is held once every twelve years, that instead of Allahabad, the natives call it 'Fakirabad,' or City of Beggars. The cotton, sugar, and indigo produce of the fertile district of A. is brought in large quantities into the city, to be transported thence to Calcutta and elsewhere. Steamers sail to Calcutta and barges to Delhi. A. is distant from Calcutta, by land, 496 m.; by water, 808 m. in the rainy season; by water, 985 m. in the dry season. From Delhi it is distant 886 m.; and from Bombay by the Jubbulpore branch of the East Indian railway, 840 m. Pop. (1872) 143,693; (1881) 148,547.

ALLAMANDA, *äl-lä-män'dä*: genus of plants of the natural order *Apocynaceæ* (q.v.), distinguished by a 5 parted calyx without glands, a funnel-shaped corolla with its limb campanulate, and the fruit a prickly capsule. *A. cathartica*, a native of the West Indies, is a shrub with whorled or opposite oblong leaves, and large yellow flowers on many-flowered footstalks. It has violently emetic and purgative properties; but in small doses, an infusion of the leaves is esteemed a valuable cathartic medicine, especially in the cure of painter's colic. All the species are natives of the tropical parts of America.

ALLAN, DAVID: 1744–96; b. Alloa: distinguished Scottish painter of domestic subjects, in which he was the forerunner of Wilkie. In 1773, his *Origin of Painting* (en-

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graved by Cunego) gained the gold medal given by the Academy of St. Luke for the best historical composition. Of his other pictures executed at Rome, the best known are four humorous pieces illustrating the Carnival, engraved by Paul Sandby. His later works were chiefly humorous, and illustrative of Scottish domestic life. His illustrations of Allan Ramsay's *Gentle Shepherd*, though very popular, are of no great merit. A. died at Edinburgh.

ALLAN, Sir WILLIAM: 1782-1850; b. Edinburgh: distinguished Scottish historical painter. Among his fellow-students and friends in the School of Design connected with the Royal Institution were David Wilkie, John Burnet, and others who afterwards rose to eminence. He subsequently studied for some time at the Royal Academy of London. In 1805 he went to Russia, where the influence of his relative, Sir Alexander Crichton, the imperial family physician, soon procured him employment. In the Russian capital, he spent several years, making occasional tours to the south of Russia, the Crimea, Turkey, and Circassia, where he made numerous sketches, some of which supplied the materials of his best known works. In 1814, he returned to Edinburgh, and soon afterwards established his reputation by the exhibition of his *Circassian Captives*, a large picture, distinguished by the picturesqueness of the subject and the elaborate fidelity and spirit of its treatment. The purchase of two of his pictures by the Grand Duke Nicholas, afterwards emperor, when on a visit to Edinburgh, promoted the sale of his works. In 1826, he was elected an Associate of the London Acad.; in 1835, an Academician. In 1838, on the death of Mr. George Watson, the Royal Scottish Acad. elected him its president, and on the death of Sir David Wilkie, in 1841, he was appointed Limner to Her Majesty for Scotland, and was knighted. At intervals, he made excursions into the continent, visiting Spain and Morocco in 1834, St. Petersburg in 1841, and Germany and Belgium in 1847. At St. Petersburg, he received a commission from the emperor to paint a large picture of *Peter the Great Teaching Shipbuilding to his Subjects*, exhibited at London in 1845, and now in the imperial Winter Palace at St. Petersburg. For some time before his death he had been diligently working at a great picture of *Bruce at Bannockburn*. He died in his painting-room, to which his bed had been removed, 1850, Feb. 22. The great merits of A. as a painter are conscientious fidelity, skill in composition, and dramatic force. The impulse contributed by him to historical painting, especially of national subjects, entitles him to a very high place in Scottish art. Among his chief works, many of which are well known through engravings, are—*John Knox Admonishing Queen Mary*, 1823; *Queen Mary Signing Her Abdication*, 1824; *Death of the Regent Moray*, 1825; *Polish Exiles*, 1834; *The Slave-market at Constantinople*, 1837; *Battle of Prestonpans*, 1842; *Waterloo*, two pictures, from the French and English positions, the first of which was bought by the Duke of Wellington.

ALLAN, BRIDGE OF—ALLARD.

ALLAN, BRIDGE OF, *-al-lăn*: a beautiful village in Scotland, consisting chiefly of lodging houses; within the shelter of a spur of the Ochils, 3 m. from Stirling, on the road from Stirling to Perth. It is on the banks of the Allan, which, like the heights behind the place, are richly wooded. It owes its prosperity partly to its mineral (saline) wells, and partly to its sheltered situation and mild climate, which render it a favorite resort of invalids, especially in spring and autumn. There are excellent hotels, and abundance of good lodgings. Pop. (1881) 3,005.

ALLANTOIC, a. *ăl-ăn-tō'ik* [Gr. *allas*, a sausage; *allan'-tos*, of a sausage—so named from the shape of the allantois]: name of an acid found in the liquor of the *allantois*—a membrane enveloping the foetus. **ALLANTOIDEA**, n. plu. *ăl-ăn-toy'dē-ă* [Gr. *eidos*, resemblance]: the group of vertebrata comprising reptiles, birds, and mammals, in which the foetus has an allantois. **ALLANTOIN**, n. *ăl-lăn-tō'in*, a substance found in the allantoic liquor of the cow, and obtained artificially by oxidizing uric acid.

ALLANTOIS, *ăl-ăn'toys*: a delicate membranous bag, which makes its appearance in the eggs of birds during incubation, and is a provision chiefly for the aeration of the blood of the embryo or chick. It sprouts from the lower part of the intestine of the chick, and rapidly enlarges so as almost completely to inclose it, lining nearly the whole extent of the *membrana putaminis*—the double membrane which is immediately within the egg-shell. It is covered with a network of arteries and veins, corresponding to the umbilical artery and vein of Mammalia; and the aeration of the blood is accomplished by the air which enters through the pores of the shell; but as the lungs become capable of their function the circulation in the A. diminishes, and its footstalk contracts, and at last divides, leaving only a ligamentous remnant. The A. is never developed in the eggs of Fishes and Amphibians, hence these are called Anallantoid Vertebrates; while Reptiles, Birds, and Mammalia, in which it is present, are called Allantoid. In the Mammalia it is superseded at an early period of foetal life by other contrivances, but continues to exist in the lower animals for receiving the urinary secretion through the urachus, a purpose which it serves in birds and reptiles likewise. In the human species it disappears very early, only a minute vesicle remaining.

ALLARD, *ă-lăr'*, generalissimo of the army of Lahore, and previously adjutant to Marshal Brune under Napoleon: 1783-1839. After the murder of Marshal Brune (q.v.) A. left France (1815), intending to emigrate to America, but changed his plan, entered into the service of Abbas-Mirza of Persia, and afterwards went to Lahore (1820), where he engaged in the service of Runjeet Singh (q.v.), by whom he was made generalissimo, and whose forces he organized and trained in the European modes of warfare. Having married a native of Lahore, he identified himself with the interests of his adopted country, but could not entirely forget

ALLAY—ALLEGHANY CITY.

FRANCS. The July revolution brought him back to Paris, where he was received with distinction, and was made French *chargé d'affaires* in Lahore. He presented to the Royal Library of Paris a valuable collection of coins, and returned to Lahore (1836), leaving his wife and children in Paris. In the subsequent battles of Runjeet Singh with the Afghans A. repeatedly distinguished himself. He d. at Peshawur. His remains were, according to his own wish, buried with military honors at Lahore.

ALLAY, v. *āl-lā'* [OE. *allege*; AS. *aleegan*, to lay down, to mitigate; OF. *allegier*; It. *alleggiare*; L. *alleviāre*, to lighten, to mitigate—*lit.*, to lay or put down]: to set at rest; to make quiet; to make less in pain or grief. **ALLAY'ING**, imp. **ALLAYED**, pp. *āl-lā'id'*. **ALLAYMENT**, n. *āl-lā'mēnt*, state of rest after disturbance. **ALLAY'ER**, n. one who or that which.—**SYN.** of 'allay': to suppress; tranquillize; alleviate; check; quiet; calm; soothe; subdue; destroy; compose; repress; assuage.

ALLEG, v. *āl-lēj'* [F. *alleguer*, to produce reasons—from L. *allegāre*, to send one to another with a commission or charge—from L. *ad*, to; *lēgo*, I send, I intrust to]: to adduce reasons in support of an argument; to plead as an excuse; to affirm; to declare. **ALLEG'ING**, imp. **ALLEGED**, pp. *āl-lēj'd'*. **ALLEG**EABLE, a. *āl-lēj'ā-bl*, capable of being alleged. **ALLEG'ER**, n. one who. **ALLEGATION**, n. *āl-lē-gā'shūn*, something offered as a plea or an excuse; an affirmation; an assertion.—**SYN.** of 'allege': to adduce; assign; advance; cite; quote; affirm; assert; declare; produce; maintain.

ALLEGHANIES, *āl-ē gā nīz*: a name perhaps originally limited to the mountain-cradle of the Alleghany river, but often popularly extended to the whole chain, otherwise called the Appalachians (q. v.).

ALLEGHANY CITY: in Alleghany co., extreme w. part of Penn.; at the junction of the Alleghany and Ohio rivers, opposite Pittsburgh. The city has a front of 2½ m. on the right bank of the Alleghany river, and 4 m. on the right bank of the Ohio river. Its average height above sea level is 776 feet. It has water communication with all the country along the Ohio, Mississippi, and Missouri rivers; also 180 m. up the Alleghany, and 80 m. up the Monongahela. The city has railroad connections via the Pittsburgh, Port Wayne & Chicago, the Western Pennsylvania, the Pennsylvania railroad, and the Pittsburgh & Western. It is the place of residence of many thousands of persons doing business in Pittsburgh. A. is well laid out, containing 118 m. of streets, with about 7 m. of horse-railways. The city owns water-works which cost \$1,000,000; it is lighted by gas, supplied by a private corporation. A public park, now twenty years old, is maintained by the city. There is one theatre, and there are seven halls for concerts, lectures, etc. There is a paid fire department, a police force numbering 61 men, a large public market, and two corporation cemeteries, tastefully laid out. Its manufacturing interests are large and important, with a capital invested (1880), \$8,451,059, in 424 establishments, employing 6,471 hands,

ALLEGHANY RIVER—ALLEGIANCE.

and an annual product of \$13,731,792. The manufactures include, among the most important, cotton goods, foundry and machine-shop products, iron and steel, leather, paints, and paper-hangings. Among the institutions and public buildings of A. are the Western Theo. Sem. (Presb.), the theo. sem. of the United Presb. Church, the Alleghany Theol. Institute (Ref. Presb.), about 45 churches, the Western Penitentiary of Pennsylvania, U. S. Arsenal, Home for the Friendless, House of Industry, and Orphan Asylum. There are eight banks, public and private; and one daily and one weekly newspaper. The city is connected with Pittsburgh, on the other side of the Alleghany river, by several fine bridges. Although it maintains its separate corporate existence, it is considered in the light of a suburb, or almost a part of the larger and more important city. Pop. (trebled since 1860, when it was 26,702) (1870) 53,180; (1880) 78,680.

ALLEGHANY RIVER: rising in the n. part of Penn., unites with the Monongahela at Pittsburgh to form the Ohio. Though it flows through a hilly country, yet it is navigable for nearly 200 m. above Pittsburgh, whence by the Ohio and the Mississippi the navigation extends to the Gulf of Mexico.

ALLEGIANCE, n. *äl-lē'jāns* [F. *allégeance*—from mid. L. *allēgiān'tiā*, an oath of homage or fealty—from L. *ad*, to; mid. L. *litgāntiā*, the duty of a subject to his lord—from *litus*, a man owing services to his lord (see **LIEGE**)]: an oath of homage or fealty taken by a vassal to the feudatory lord; the tie or duty that binds any one to obedience to the government and laws under which he lives; an oath, called the *oath of allegiance*.

'A.', says Blackstone, 'is the tie or *ligamen* which binds the subject to the sovereign, in return for that protection which the sovereign affords the subject.' A. is the highest legal duty of a subject, and consequently its violation, *Treason* (q.v.), is the highest legal offense. A. is of three kinds: 1. *Natural or implied A.*, which every native or naturalized citizen owes to the community to which he belongs. Independently of any express promise, every man, by availing himself of the benefits which society affords, comes under an implied obligation to defend it, and this equally whether the attack be from without or from within. In time of war this obligation involves the duty either of bearing arms in defense of the state, or of contributing to the additional taxes and other impositions which the support of a standing army may render necessary. In peaceful times, it will be adequately fulfilled by an efficient performance of ordinary citizen duties. 2. *Express A.* is that obligation which arises from an expressed promise, or *oath of A.* The old English oath of A. corresponded in the case of the sovereign, as absolute superior of all the lands in England, to the oath of fealty which, by the feudal law, all vassals were required to take to subject superiors: 'As administered for upwards of six hundred years, it contained a promise to be true and faithful to the king and his heirs,

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and truth and faith to bear of life and limb and terrene honour, and not to know or hear of any ill or damage intended him without defending him therefrom.'—Blackstone, Kerr's edition, vol. i. 368. This oath being thought to favor too much the notion of non-resistance, another form was introduced by the Convention Parliament. That in use in Britain since the passing of the new Naturalization Act in 1870 (33 Vict. c. 14) is as follows: 'I do swear that I will be faithful and bear true A. to Her Majesty Queen Victoria, her heirs and successors, according to law. So help me God.' From the reign of Queen Elizabeth to the present time the oath of A. has been required from all public functionaries before entering on their offices, and by all professional persons before being permitted to practice.

3. *Local* or temporary A. is that obedience and temporary aid due by an *Alien* (q.v.) to the state or community in which he resides. Local differs from the higher kinds of A. in this, that it endures only so long as the alien resides within a certain state or community, whereas natural A., whether implied or expressed, is perpetual, following not only the individual himself, but his children and grandchildren. In the British realm, by the provisions of the act above referred to, A. may now be renounced, even by natural-born subjects, and this whether born within the realm or not, by a declaration of *alienage* (sec. 4), and it is forfeited by the acceptance of the allegiance of a foreign state (sec. 6). But the allegiance thus forfeited may be resumed. See NATURALIZATION.

By the law of England, and agreeably to the spirit of the constitution, a usurper in undisputed possession of the crown, or king *de facto*, is entitled to A., because he then represents, not the sovereign whom he has dispossessed, but the general will, in which the ultimate sovereignty of England resides. This doctrine was applied when Edward IV. recovered the crown from the House of Lancaster, and treasons committed against Henry VI. were capitally punished. The sovereign may by proclamation summon his subjects to return and take part in the defense of the kingdom when menaced or endangered. Of this an instance occurred in 1807, when all seamen and seafaring men who were natural-born subjects were recalled from foreign service. The option of accepting the foreign A. would now be given them, and the same legal outlet is furnished from the provisions of the otherwise unenforceable Foreign Enlistment Act (q.v.).

A., in the United States, is the tie which binds the citizen to the government, in return for the protection which the government affords him. A. is either natural, acquired, or local. Natural A. is that which is due from all natives of the United States; acquired A. is that which is due on the part of a naturalized citizen; local A. is that which is due from an alien while resident in the United States, in return for the protection afforded him by the government. The question whether a citizen can, by expatriation, divest himself absolutely of his American A. has never yet been decided. It is, however, generally understood that, while he

ALLEGORY.

cannot renounce his A. to the United States without the permission of the government, to be declared by law—for commercial purposes he may acquire the rights of a citizen of another country, and the place of domicile determines the character of a party as to trade.

ALLEGORY, n. *ăl'lē-gŏr'ī* [F. *allegorie*—from Gr. *allē-gōr'ia*, a figure of speech in which the sense is different from the apparent one—from *allos*, another, different; *agōreuō*, I harangue]: speech or language which involves a sense different from the apparent one; a continued metaphor; figurative speech; language that has another meaning than the literal one—the Jews compared to a vine in the 80th Psalm is an allegory. **ALLEGORIZE**, v. *ăl'lē-gŏ-rīz'*, to form into an allegory; to use figurative speech. **AL'LEGOR'IZING**, imp. **AL'LEGORIZED'**, *-rīzd'*, pp. **ALLEGORIC**, a. *ăl'lē-gŏr'ik*, or **AL'LEGOR'ICAL**, a. *-ī-kŭl*, figurative; in the manner of an allegory. **AL'LEGOR'ICALLY**, ad. *-lī*. **AL'LEGOR'ICALNESS**, n. **AL'LEGORIST'**, n. one who.

ALLEGORY: a figure of rhetoric, signifying properly the embodiment of a train of thought in a visible form, by means of sensible images, having some resemblance or analogy to the thoughts. A., therefore, is one of the Tropes (q.v.), for it involves a transfer of meaning. It differs from metaphor chiefly in extent; metaphor is confined to a single expression, or at most to a sentence; A. is carried through the whole representation. It is not abstract ideas alone that are adapted to allegorical treatment; not only may virtue and vice, for instance, be personified and treated allegorically, but real persons may be represented by allegorical persons.

A. has been in use from the earliest ages. Oriental people are specially fond of it. As examples from antiquity may be cited the comparison of Israel to a vine in Psalm lxxx.; the beautiful passage in Plato's *Phædrus*, where the soul is compared to a charioteer drawn by two horses, one white and one black; the description of Fame in the 4th Book of the *Æneid*. Bunyan's *Pilgrim's Progress* is perhaps the most fully carried out A. of modern times.—A. is not confined to language, but is carried into painting and sculpture, and also into scenic representation—as in the ballet and pantomime; the consideration of it is, therefore, of importance in the fine arts generally.

ALLEGORICAL INTERPRETATION is that kind of interpretation by which the literal significance of a passage is either transcended or set aside, and a more spiritual and profound or at least more recondite meaning elicited than is shown in the form or letter. The common mistake, that it originated with the Alexandrine school, is refuted by the fact that it is found in the writings of the older Hindus. From the scholars of Alexandria, however, it was adopted by the Jews of Palestine, of whom a particular sect, the Essenes, made abundant use of it. The apostle Paul himself allegorizes, or at least spiritually interprets the history of the free-born Isaac and the slave-born Ishmael (Gal. iv., 24). Allegorical interpretation, however, with reference to the Old Testa-

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ment, was most extensively employed by Philo Judæus, a philosophical Jew of Alexandria, and a contemporary of Jesus Christ. His writings stimulated the allegorizing tendencies of the Alexandrine school of Christian theologians, the most famous of whom are Clemens Alexandrinus and Origen. The latter went so far as to say that 'the Scriptures are of little use to those who understand them as they are written.' As a specimen of his method of biblical interpretation, we may adduce the following: he maintained that the Mosaic account of the Garden of Eden was allegorical; that Paradise only symbolized a high primeval spirituality; that the fall consisted in the loss of such through spiritual and not material temptation; and that the expulsion from the Garden lay in the soul's being driven out of its region of original purity. The Neo-platonists were at first averse to allegorizing, but gradually acquired a relish for it from the Jews and Christians, and applied it to the ancient myths.

ALLEGRO, ad. *ăl-lē'grō* [It. *allegro*, brisk—from L. *alacer*, brisk, lively: F. *leger*, light, nimble]: in *music*, a term denoting merrily; cheerfully; the fourth of the five principal degrees of movement, implying that the piece is to be performed in a quick or lively style. A., like all the other degrees of movement, is often modified by other terms; such as A. *non tanto*, A. *ma non troppo*, A. *moderato*, *maestoso*, *giusto*, *commodo*, *vivace*, *assai*, *di molto*, *con brio*, etc.: N. a brisk movement. As a substantive, A. is used as the name of a whole piece of music, or a movement of a symphony, sonata, or quartet. **ALLEGRETTO**, ad. *ăl-lē-grēt' tō*, a movement not so quick as allegro.

ALLELUIAH, n. *ăl-lē-lō'yă*: see **HALLELUIAH**.

ALLEMANDE, *ăl-lē-mănd'*: a dance invented by the French in the time of Louis XIV., which again became popular at the Parisian theatres during the reign of the first emperor. It has a slow waltz kind of tempo, and consists of three steps (*pas marchés*) made in a sliding manner, backwards and forwards, but seldom waltzing or turning round. The whole charm of the dance lies in the graceful manner of entwining and detaching the arms in the different steps. Both the dance and the music are said to have originated in Alsace; and thus the introduction of the A. at the court of Versailles was a sort of artistic way of symbolizing the incorporation of the newly-acquired German provinces.

ALLEN, ETHAN: 1739-89: b. Salisbury, Conn., but, with his four brothers, removed early to Vermont, where he received his limited education. He became conspicuous in the colonial troubles between New York, New Hampshire, and Vermont concerning the dominion of the latter, and was sent by the settlers to Albany, as an agent, and afterwards commanded a force which successfully resisted the aggressions of the New York colonists. The outbreak of the revolutionary struggle put an end to local troubles, and the occupation of Ticonderoga becoming a military necessity, A. called together about 300 'Green Mountain Boys,' and, 1775, May 10, captured the place by surprise. In Allen's command was the afterwards notorious Benedict Arnold,

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Arousing the commander at Ticonderoga, Delaplace, from his bed, A. demanded his surrender, 'in the name of the great Jehovah and the Continental Congress.' The place was given up without a struggle, and its fall was followed by that of Crown Point, the entire northern region being thus gained from the English. A. afterwards joined the force under the command of Gen. Schuyler, and was employed in secret missions of importance both by him and by Montgomery. In an attack on Montreal, 1775, Sept., he was captured, and was sent to England, and confined in prisons there, and at Halifax and New York until the spring of 1778, when he was released by exchange. The severity of the treatment which he had received while in the hands of the British had undermined his health, and he returned to Vermont, after visiting Washington at his headquarters, and tendering his services whenever they should be needed. A. was a man of great force of character, an original thinker; and had he been educated, might have made his mark as an author. As it was, he wrote the first work by an American in opposition to the Christian religion, entitled *Theology; or, the Oracles of Reason*. He was twice married, and, dying suddenly at Colchester, Vt., left a widow and seven children.

ALLEN, JOHN, M.D.: 1770-1843; b. Redford, near Edinburgh: a *littérateur* of considerable talent. He was educated at the Univ. of Edinburgh, and four years later he entered the lists against Dr. Gregory in defense of Hume's speculations on liberty and necessity. In 1801, he published *An Introduction to the Study of the Animal Economy*, translated from Cuvier. He is said to have contributed upwards of forty articles to the *Edinburgh Review*, chiefly on British, French, Spanish, and South American politics. His most valuable work is considered to be his *Inquiry into the Rise and Growth of the Royal Prerogative in England* (1830).

ALLEN, BOG OF, -*äl'en*: general name applied to a congeries of morasses e. of the Shannon, in King's county and Kildare, Ireland, comprising in all about 238,500 Eng. acres. The strips of arable land which intersect this bog are occasionally watered by rivers which have their sources in the contiguous fens, such as the Barrow, Boyne, and Brosna; the Grand canal also passes through it. The average elevation of the morasses is 250 ft. above the sea-level. They approach to within 17 miles of Dublin on the e., and almost to the Shannon on the w. The depth of the peat found in them is about 25 ft.

ALLENTOWN: a city, cap. of Lehigh co., Penn.; on elevated ground, on the w. bank of the Lehigh river, 51 m. from Philadelphia, and 36 from Reading. The Lehigh Valley is rich in iron ore and anthracite, and extensive mining has brought A. to a position of importance. Its settlement was in 1750, when the first house was built by William Allen, on land received by grant from William Penn. It was originally called Northampton, the name being changed in 1838 in honor of its founder and first settler. The city is well laid out, with wide streets, is lighted by gas, and con-

ALLEVIATE—ALLIACEOUS.

tains several attractive public buildings. Its educational facilities are extensive, including an academy, military institute, and theol. sem. There are also two national banks, two savings banks, nine daily and weekly papers. Pop. (1860) 8,025; (1870) 13,884; (1880) 18,063. A large proportion of the population is 'Pennsylvania Dutch,' so-called, speaking a language formed of various native dialects with an admixture of English. There are numerous iron foundries and furnaces in and near A., and it is said that one-tenth of all the iron manufactured in the United States comes from this district.

ALLEVIATE, *v.* *āl-lē'vī-āt* [mid. L. *alleviātus*, made light, mitigated—from *ad*, *lēvis*, light (see **ALLAY**)]: to make light; to make easier; to lessen, as pain, sorrow. **ALLEVIA'TING**, *imp.* **ALLEVIA'TED**, *pp.* **ALLEVIA'TION**, *n.* *-shūn*, the act of lessening or making more endurable. **ALLEVIA'TIVE**, *a.* *-d'tiv*, that lessens or palliates.—**SYN.** of 'alleviate': to appease; allay; relieve; pacify; mitigate; soothe; assuage; lessen; diminish; soften; abate; nullify.

ALLEY, *n.* *āl'li* [*F. allée*, a passage—from *aller*, to go. *OF. a'lee*, a gallery]: a narrow walk or passage. **BLIND ALLEY**, a lane or narrow street that has no exit or through passage; a cul-de sac.

ALLEYN, *āl'len*, **EDWARD**: 1566–1626: a distinguished actor, contemporary and friend of Shakespeare; known principally as the munificent and pious founder of Dulwich College (*q.v.*). The building of the college was begun 1613; and in 1619 the institution obtained the royal charter, after some obstruction on the part of Lord Bacon, who wished the king to apply part of the grant to the foundation of two lectureships at Oxford and Cambridge. A. himself took up his quarters in the college as master, living with his wife as a pensioner on equal terms with the sharers of his bounty. He also founded numerous almshouses in London.

ALL HALLOW: see **ALL SAINTS' DAY**.

ALLIA, *āl'li-ā*: a small stream which fell into the Tiber, 11 m. n. of Rome. It is celebrated as the scene of the defeat of the Roman army by the Gauls under Brennus, *B.C.* 397, or, according to others, 390. Immediately afterwards Rome was taken, plundered, and burned. It is difficult to identify the A. with any of the modern streams; but the evidence seems in favor of the *Scolo del Casale*.

ALLIACEOUS, *a.* *āl'li-ā'shūs* [*L. allium*, Garlic]: pert. to the garlic or onion tribe. A. **PLANTS** are those of the genus *Allium* (*q.v.*), or others nearly allied to it. The term is generally employed to denote not only the possession of certain botanical characters, but also of a certain smell and taste, of which examples are readily found in the onion, leek, garlic, and other familiar species of *Allium*. These plants contain free phosphoric acid and a sulphuretted oil, which is partly dissipated in boiling or roasting. The A. flavor is, however, found also, although in comparatively rare instances, in plants of entirely different botanical affinities—for example, in *Alliaria officinalis*, of the natural order

ALLIANCE—ALLIER.

Cruciferae (see ALLIARIA), in the young shoots of *Cedrela angustifolia*, a tropical American tree of the natural order *Cedrelaceae*, allied to mahogany; and in certain species of *Dysoxylon* and *Hartighsea*, of the kindred order *Meliaceae*, the fruit of which is used instead of garlic by the mountaineers of Java.

ALLIANCE. n. *äl-lî'äns* [F. *alliance*, union: L. *ad, ligo*, I bind]: union formed by marriage; a treaty or union between nations; a union for any purpose. **ALLIED**, *äl-lîd'*, pp. of **ALLY**, which see; connected by marriage, interest, or friendship. **ALLIES'**: see **ALLY**.—**SYN.** of 'alliance': league; confederacy; connection; affinity; coalition. See **TREATY**: **HOLY ALLIANCE**: **TRIPLE ALLIANCE**.

ALLIARIA, *äl-lî-är'i-ä*: genus of plants of the natural order *Cruciferae* (q. v.), closely allied to *Sisymbrium* and *Erysimum*, but differing from both in having the stalks of the seeds flat and winged. The best known species is *A. officinalis* (*Erysimum* A. of Linnæus, and ranked by some botanists in the genus *Sisymbrium*), known by the popular names of Sauce-alone and Jack-by-the-Hedge. It is a native of

Britain, not unfrequently found on the hedgebanks and in waste places in dry rich soils, and is common in most parts of Europe. It is a biennial, with a stem 2 to 3 ft. high; large, stalked, heart-shaped leaves; white flowers, and pods much longer than their stalks, which are somewhat spreading. It is remarkable for its strong alliaceous odor, is occasionally used as a pot-herb in Britain, and very generally, at least by the poorer classes, in some other countries of Europe. It seems more deserving of cultivation than many other plants which have long received the constant care of the gardener, being wholesome, nutritious,



Alliaria officinalis.

a, upper part of stem, with leaves and flowers; b, extremity of a branch, in fruit.

and to most persons, pleasant. The powdered seeds were formerly employed as a sternutatory.

ALLICE, or **ALLIS**: see **SHAD**.

ALLIER, *äl'lé-ä*: a river in France, a tributary of the Loire; has its source in the water-shed of the e. of the dept. of Lozère; flows n. through Haute-Loire, Puy-de-Dôme, and Allier; and after a course of more than 200 m., falls into the

ALLIER—ALLIGATOR.

Loire below the town of Nevers. It is navigable for a considerable portion of its length.

ALLIER: a dept. in the centre of France, 2,810 sq. m. It is a hilly district, especially in the s., sloping down towards the river Loire in the n., and is partly woody, but generally well cultivated, producing the usual kinds of grain, with wine and oil. It is also rich in minerals, especially iron, coal, antimony, manganese, and marble. There is some manufacturing industry in cotton, wool, linen, carpets, pottery, and glass; but the majority of the population is engaged in agriculture. Mineral springs are found at Vichy, Neris, and Bourbon-l'Archambault. The chief town is Moulins. Other important places are Montluçon, La Palisse, Gannat. At Chantelle-le-Chateau are the extensive ruins of King Pepin's castle. Pop. (1881), 416,759.

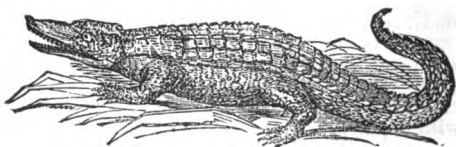
ALLIGATION, n. *āl'li-gā'shūn* [L. *alligātionem*, a binding or tying to—from *alligārē*, to bind together—from *ad*, *ligo*, I bind]: a rule in arithmetic for finding the value or price of any mixture. It is used for solving such questions as the following: 3 lbs. of sugar at 6 cents are mixed with 5 lbs. at 10 cents; what is the price of a pound of the mixture? or: In what proportion must sugar at 6 cents be mixed with sugar at 10 cents, to produce a mixture at $8\frac{1}{4}$ cents? The solution of the first is $\frac{8 \times 6 + 5 \times 10}{4 + 5} = 8\frac{1}{4}$ cents.

In the second, the proportional number for one ingredient is the difference between the price of the other and that of the mixture; the number for the cheap sugar is therefore $1\frac{1}{4}$, and for the dear, $2\frac{1}{4}$, which are as 3 : 5, so that there must be 3 lbs. at 6 cents for every 5 lbs. at 10 cents. If there are more than two ingredients, the problem becomes indeterminate; that is, it admits of a variety of answers. Thus: Of three metals, whose specific gravities are 10, 15, and 16, it is required to compose an alloy whose specific gravity shall be 14. The conditions will be answered by mixing them in any of the following proportions: 1, 2, 1; 2, 2, 3; 6, 2, 11, etc.

ALLIGATOR, n. *āl'li-gā'tér* [Sp. *el-lagarto*, the lizard: L. *lacerta*: Port. *allagarto*]: a genus of saurian reptiles of the family of the *Crocodylidae*, and still regarded by some naturalists as a mere sub-genus of *Crocodylus*; although it has recently been proposed to constitute a family or sub-family of *Alligatoridae*, and to divide it into the genera *Jacare*, *Alligator*, and *Caiman*. The alligators differ from the true crocodiles in the shorter and flatter head, the existence of cavities or pits in the upper jaw, into which (and not into mere notches between the teeth, as in the crocodiles) the long fourth teeth of the under jaw are received, and the much less webbed feet. In consequence of the different manner in which provision is made in the upper jaw for the reception of the longest teeth of the lower, the head of the alligators is broader and the snout more obtuse than in the crocodiles. Their habits are less perfectly aquatic; they frequent swamps and marshes, and may be seen basking on the dry ground during the day, in the heat of the sun. They are most

ALLIGATOR APPLE—ALLITERATION.

active during the night, and then make a loud bellowing. They have great strength in their tails, with which the larger ones can easily upset a light canoe. They feed chiefly on fish, but do not object to other animal food. The females lay their eggs, 20-60 in number, in the mud, and leave them to be hatched by the heat of the sun, but keep watch over the spot, and show much affection for their young ones, many of which, however, fall a prey to the old males, and to vultures and fishes. There are several species, varying from two to twenty ft and upwards in length. Perhaps the most fierce and dangerous is that found in the southern parts of the United States, as far up the Mississippi as the Red river, *A. Lucius*. The snout is a little turned up; and its resemblance to that of a pike has led to the specific name *Lucius*. In cold weather these animals bury themselves in the mud, and become so torpid,



Alligator.

that they may be cut to pieces without showing signs of sensibility; but a few hours of bright sunshine are enough to revive them. Like the other species, they are so protected by their mailed plates, that they are not easily killed, except by a shot or blow over the eyes. A very strong kind of leather is prepared from the skin, which is used for making saddles. It is said that a considerable quantity of oil can be extracted from an A., which is transparent and burns well. The alligators of S. Amer. are there very often called *Caymans*, probably an Indian name, and some of them bear the name of *Yacaré*, particularly *A. sclerops*, also distinguished as the Spectacled Cayman, on account of a prominent bony rim surrounding the orbit of each eye. This species appears to be widely distributed over tropical America, and attains a great size. Alligators are not known to exist in any quarter of the world except America, in which, however, true crocodiles are also found. But among the fossils of the s. of England are remains of a true A. (*A. Hantoniensis*) in the Hordle beds. The flesh of alligators is eaten by Indians and negroes. It has a musky flavor.—The name is supposed to be a corruption of the Portuguese *lagarto*, lizard. Cuvier adopted it as a scientific name.

ALLIGATOR APPLE: see CUSTARD APPLE.

ALLIGATOR PEAR: see AVOCADO PEAR.

ALLITERATION, n. *ăl-lit'ér-ă'shŭn* [F. *allitération*—from L. *ad, litēra*, a letter]: the frequent repetition of a letter usually an initial) or sound in successive words,—generally in poetry. ALLITERATIVE, a. *-ă-tiv*, pertaining to. In Old

ALLITERATION.

German, Anglo-Saxon, and Scandinavian poetry, A. took the place of rhyme. This kind of verse, in its strict form, required that in the two short lines forming a couplet, three words should begin with the same letter, two in the first line or hemistich, and one in the second, as in the following couplet of Anglo Saxon poetry:

*Flum foldan
Frea almihtig.—Cædmon.*

A. has not quite disappeared from Icelandic poetry to this day. Alliterative poems continued to be written in English after it had assumed its modern form; the most remarkable is *Pierce Plowman*, a poem of the 14th c., of which the following is a specimen, the two hemistichs being written in one line:

*Mercy hight that maid, | a meek thing withal,
A full benign burd, | and buxom of speech.*

Even after the introduction of rhyme, A. continued to be largely used as an embellishment of poetry, and is so, though to a less extent, to this day:

*The fair breeze blew, the white foam flew,
The furrow followed free.—Coleridge.*

Besides the Gothic, there are other nations widely separated from each other, among whom the essential distinction of verse is A.; the Finns, for instance, and the Tamuls in the s. of India.

But A. is not confined to verse; the charm that lies in it exercises great influence on human speech generally, as may be seen in many current phrases and proverbs in all languages: Ex., 'life and limb,' 'house and home,' 'wide wears, tight tears,' etc. It often constitutes part of the point and piquancy of witty writing. This application of A. is felicitously exemplified by Sidney Smith, when, contrasting the conditions of a dignitary of the English Church and of a poor curate, he speaks of them as 'the Right Reverend Dives in the palace, and Lazarus-in-orders at the gate, doctored by dogs and comforted with crumbs.'

In the early part of the 17th c., the fashion of hunting after alliterations was carried to an absurd excess; even from the pulpit, the chosen people of God were addressed as 'the chickens of the church, the sparrows of the spirit, and the sweet swallows of salvation.' *Ane New-year Gift*, or address, presented to Mary Queen of Scots by the poet Alexander Scott, concludes with a stanza running thus:

*Fresh, fulgent, flourist, fragrant flower formose,
Lantern to love, of ladies lamp and lot,
Cherry maist chaste, chief carbuncle and chose, etc.*

In the following piece of elaborate trifling, given (but without naming the author) in H. Southgate's *Many Thoughts on Many Things*, Alliteration is combined with Acrosticism:

A n Austrian army, awfully arrayed,
B oldly by battery besieged Belgrade;
C ossack commanders cannonading come,
D ealing destruction's devastating doom;
E very endeavor engineers essay
F or fame, for fortune, forming furious fray.
G aunt gunners grapple, giving gas-hes good,
H eaves high his head heroic hardihood;

ALLIUM—ALLOA.

I braham, Islam, Ismael, imps in ill,
J ostle John Jarovlitz, Jem, Joe, Jack, Jill;
K ick kindling Kutusoff, king's kinsmen kill
L abor low levels loftiest, longest lines;
M en march 'mid moles, 'mid mounds, 'mid murd'rous mines.
N ow nightfall's near, now needful nature nods,
O pposed, opposing, overcoming odds.
P oor peasants, partly purchased, partly pressed,
Q uite quaking, 'Quarter! quarter!' quickly quest.
R eason returns, recalls redundant rage,
S aves sinking soldiers, softens signiors sage.
T ruce, Turkey, truce! truce, treach'rous Tartar train!
U nwise, unjust, unmerciful Ukraine,
V anish, vile vengeance! vanish, victory vain!
W isdom wails war—wails warring words. What were
X erxes, Xantippe, Ximenes, Xavier?
Y et Yassy's youth, ye yield your youthful yest.
Z ealously, zanies, zealously, zeal's zest.

ALLIUM, *ăl'li-ŭm*: genus of plants of the natural order *Liliaceæ* (q.v.), containing a large number of species, perennial—more rarely biennial—herbaceous plants, more or less decidedly bulbous-rooted, natives chiefly of the temperate and colder regions of the northern hemisphere. The flowers are umbellate, inclosed in a spathe, and the umbel often bears also small bulbs with its flowers. The perianth is of six spreading pieces, resembling petals, having the stamens inserted in their base. The fruit is a triangular capsule, and the seeds are angular. The leaves are generally narrow, although in some species, as *A. ursinum*, they are rather broad, and in a considerable number they are rounded and fistulose. **GARLIC** (q.v.), **ONION** (q.v.), **LEEK** (q.v.), **SHALLOT** (q.v.), **CHIVE** (q.v.), and **ROCAMBOLE** (q.v.), are species of this genus in common cultivation. The first four are cultivated in the gardens of India, as well as of Europe, with *A. tuberosum*; and the hill-people of India eat the bulbs of *A. leptophyllum*, and dry the leaves, and preserve them as a condiment. A number of other species are occasionally used in different countries.—Eight or nine species are natives of Britain, of which the most common is **RAMSONS** (*A. ursinum*) a species with much broader leaves than most of its congeners. It is most frequently found in moist woods and hedge-banks; but occasionally in pastures, in which it proves a troublesome weed, communicating its powerful odor of garlic to the whole dairy produce. **Crow Garlic** (*A. vineale*), another British species, is sometimes very troublesome in the same way, in drier pastures. Both are perennial, and for riddance of them, their bulbs must be perseveringly rooted out when the leaves begin to appear in spring.

ALLOA, *ăl'w-ă*: seaport town in Clackmannanshire, Scotland, is situated on the left bank of the Forth, where the river widens into its estuary, 7 m. (by road) below Stirling. Pop. in 1881, 10,601. It is a town of considerable antiquity, and is an active centre of trade and manufactures. The principal articles manufactured are whisky and ale, the latter of which is highly esteemed. There are extensive glass, iron, and brick works, and ship-building yards. Copper utensils, shawls, and blankets, leather, tobacco, and snuff are manufactured, and much coal is

ALLOCATE—ALLODIUM.

regularly exported from the pits in the immediate neighborhood of the town. Coal is a chief item in the coasting trade, besides which there is a considerable foreign trade, chiefly outwards. The 1,087 vessels that entered the port in 1880 had a tonnage of 140,719 tons. The harbor is good, with 16 ft. of water at neap, and 22 at spring tides; it is furnished with a dry-dock. There is a steam-ferry across the Forth, connecting by a short junction line with the Scottish Central railway. It is also connected with that line, and with the Edinburgh and Northern railway, by the Stirling and Dunfermline branch. There is regular steam-communication by the river with Edinburgh and Stirling. In the neighborhood is Alloa Tower, 89 ft. high, supposed to have been built in the 13th c., once the residence of the Erskines, and at different times of Scottish princes.

ALLOCATE, v. *äl'lä-küt* [mid. L. *allocatus*, placed to, allotted—from L. *ad*, *locus*, a place]: to place to; to give each one his share or part; to set apart for any purpose; to distribute. **AL'LOCA'TING**, imp. **AL'LOCA'TED**, pp. **AL-LOCATION**, n. *äl'lä-kü'shün*, the act of setting apart for; the assigning a place for. **ALLOCATUR**, n. *äl'lä-kü'ter* [L. it is allowed]: in *law*, a word indicating the amount allowed, in the taxation of a bill of costs, by the proper officer of court.—**SYN.** of 'allocate': to allot; assign; appoint; distribute; destine; apportion.

ALLOCHROITE, n. *äl-lök'rö-üt* [Gr. *allos*, different; *chröi*, color]: a fine-grained, massive variety of iron-garnet, exhibiting a variety of colors when melted with phosphate of soda before the blow-pipe.

ALLOCUTION, n. *äl'lä-kü'shün* [L. *allocütionem*, a speaking to, an address—from *ad*, *locütus*, spoken]: a formal address written or spoken: specially the address delivered by the pope at the College of Cardinals on any ecclesiastical or political circumstance. It corresponds in some measure to the official explanations which constitutional ministers give when questions are asked in parliament, or to the political messages of an emperor. The Roman see makes abundant use of this method of address, when it desires to guard a principle which it is compelled to give up in a particular case, or to reserve a claim for the future which has no chance of recognition in the present.

ALLODIUM, n. *äl-lö'di-üm* [mid. L. *allödialis*—from *allödium*, land held without a superior; Dan. *odel*, a patrimonial estate: Icel. *odal*, a homestead, goods abandoned]: land held in absolute possession without a feudal superior; unconditional free tenure: **ALLODIAL**, a. *äl-lö'di-äl*, free of rent; independent. **ALLODIAL TENURE**, in *Law*, is the free and absolute right of property in land, independent of any burden of homage or fidelity to a superior. When the principal landholders of England submitted to the yoke of military tenure, and surrendered their lands into the hands of the Conqueror at the council of Sarum, feudality, the previous existence or non-existence of which has been a subject of much discussion, was formally recognized, and it

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henceforth became a fundamental maxim in the law of real property, that 'the king is the universal lord and original proprietor of all the lands in his kingdom, and that no man doth or can possess any part of it, but what has mediately or immediately been derived as a gift from him, to be held upon feudal services' (Blackstone, vol. ii. p. 51, Kerr's edition). This maxim, though, as Blackstone remarks, it was even at first little more than a fiction, was not peculiar to England, but prevailed wherever the feudal system obtained, and still forms what may be called the starting-point in all feudal tenures of land. Even where subinfeudations have prevailed to the greatest extent, every title is traceable, in the last instance, to the paramount and universal superiority of the crown. See FEUDAL SYSTEM. The surrender of lands in England being the result of political measures, was one universal national act, and, consequently, allodial tenures at once ceased to exist; but in many other countries it was accomplished by private arrangements between the allodial proprietors and the prince, the former being anxious to exchange their nominal independence for the greater security enjoyed by the vassals of the sovereign; the latter being willing to receive them as dependents, for the sake either of their personal services in war, or latterly, for the equivalents of these services in money or the produce of the lands. In such countries, feudality, though general, was not universal; and allodial tenures consequently continued to subsist together with those originating with the crown. In this position was Denmark, and it is curious that the only examples of allodial tenures extant in Great Britain are the Udal rights in the islands of Orkney and Shetland, which formerly belonged to that country. 'When these islands,' says Mr. Erskine, 'were first transferred from the crown of Denmark to that of Scotland, the right of their lands was held by natural possession, and might be proved by witnesses, without any title in writing, which had probably been their law formerly while they were subject to Denmark; and to this day, the lands, the proprietors of which have never applied to the sovereign, or those deriving right from him, for charters, are enjoyed in this manner.' However, by the law of Scotland, all property and superiorities belonging to the crown itself, and all churches, churchyards, manses, and glebes, the right to which does not flow from the crown, are regarded as allodial; and the term in a wider sense, as opposed to *feudal* generally, is sometimes used with reference to movable property.

The etymology of the word A. has been much discussed, and numerous absurd derivations have been proposed. But *allodium* is doubtless 'Merovingian Latin,' appearing in French as *alleu*, which Brachet derives from *alod*, said to be an old High German word for free ownership. Skeat, following Cleasby and Vigfusson, traces it to the old Norse, *alda-odal*, a property of ages, or held for ages. This compound again comes from *aldr*, old age (akin to English *eld*) and *odal*, a patrimony (akin to the Anglo-Saxon *ædele*, noble). *Ald'odal*, contracted to *allodal*, would give rise to

ALLOPATHY—ALLOTMENT OF LAND.

low Latin *allodialis*, from which the substantive is most probably derived.

ALLOPATHY, n. *āl-lŭp'ā-thī* [Gr. *allos*, another; *pathos*, disease]: that mode of medical practice which consists in the use of drugs to produce in the body a condition opposite to the disease to be cured; the ordinary method of medical practice. It is opposed to **HOMEOPATHY**, *hīm'ē ōp'ā-thī* (q.v.), which attempts to cure disease by medicine which, in a state of health, would have produced a similar disease. **ALLOPATHIC**, a. *āl-lō-pāth'ik*, pertaining to allopathy. **AL'LOPATH'ICALLY**, ad. -*lī*. **ALLOPATHIST**, n. one who practices allopathy.

ALLOPHANE, n. *āl-lō-fān* [Gr. *allos*, different; *phaino*, I appear]: a mineral, generally of a pale-blue color, so named from its change of appearance under the blow-pipe—occurs lining small cavities, and in veins.

ALLOPHYLIAN, a. *āl-lō-fīl'ī-in* [Gr. *allophīlos*, of another tribe, foreign—from *allos*, another; *phīlō*, a race, a tribe]: a term employed to designate a primitive race or language existing among other races of the same stock, as the Basque, race and language, in the Spanish and French Pyrenees; the vast mass of living languages which cannot be classified under the Aryan and Semitic families; sporadic or scattered.

ALLOT, v. *āl-lŏt'* [L. *ad*; Icel. *hlutr*, lot; OF. *allotir*, to divide or part (see **LOT**)]: to distribute by lot; to assign to; to divide and parcel out; to apportion. **ALLOTTER**, n. one who. **ALLOT'TING**, imp. **ALLOT'TED**, pp. **ALLOT'TMENT**, n. that which has been parcelled out; a share; the part assigned. **ALLOTTERY**, n. *āl-lŏt'er-ī*, in *OE.*, that which has been granted or assigned in a distribution.

ALLOTMENT OF LAND: a legal term, which, generally speaking, signifies the grant or allowance of a portion of land too inconsiderable to be made the subject of a formal conveyance; and in this sense it has been used to denote the system or species of agricultural holding which prevailed to some extent in England towards the close of the last century, but which was not in common use till 1830, when the agricultural laborers in many counties—owing to the use of threshing-machines and other improvements which they dreaded would lower their wages—rose in insurrection against their employers. To meet this danger, the A. system was resorted to, and different societies were established for its promotion; and by the comparative contentment and comfort it produced among the peasantry, it may be considered successful. By the form of agreement usually signed by A. tenants, the use of the spade in the cultivation of land is insisted upon, and the plow prohibited, and there are other conditions of the occupancy more or less capricious. The A. may be forfeited for non-payment of the rent, the tenant's misconduct or crime, or wilful neglect of his land; but it has been thought unadvisable to exclude any one from enjoying an A. on account of his previous bad character, as, from the nature of the industrious occupation which the A. necessitates, there is the

ALLOTROPY.

chance of his reclaiming his character. See SPADE HUSBANDRY.

ALLOTROPY, n. *ăl-lôt'rō-pĭ*, or **ALLOT'ROPISM**, n. *-pĭzm* [Gr. *allos*, another; *tropē*, a conversion or change]: a term employed to denote the fact that the same body may exist in more than one molecular condition, and with different physical characteristics, as *carbon* in plumbago, the diamond, or soot. **ALLOTROPIC**, a. *ăl-lō-trōp'ik*, designating such a condition.

ALLOTROPY: term in chemistry, denoting the existence of the same element in various forms, each of which, though containing no extraneous substance, possesses different properties from the others. The various conditions in which a single element can be obtained are known as its allotropic modifications, and though as yet only a few elementary substances have been observed to exhibit such modifications, yet it is generally believed that every element is capable of existing in several allotropic forms. Phosphorus affords an excellent illustration of this doctrine. In ordinary circumstances, and when freshly prepared, phosphorus is a pale, yellow solid, of the consistence and aspect of wax, and to some extent flexible and translucent. It requires to be placed in a vessel with water to keep it from taking fire spontaneously. At any ordinary natural temperature it appears luminous, and evolves an alliaceous odor when exposed to air, owing to a slow process of combustion taking place; and when warmed to 140° F., it bursts into flame, and burns vividly. Common phosphorus is soluble in alcohol, ether, the fixed and volatile oils, and especially in bisulphuret of carbon, 100 parts of which, when warm, dissolve 20 parts of phosphorus. But the same element, when dried and kept for some days, with little or no access of air, at a temperature ranging from 446° to 482° F., passes, weight for weight—without addition or subtraction of matter—into a reddish substance, which is known to chemists as *amorphous* phosphorus. The color of this new variety is scarlet, brownish red, or even blackish red; and it exists as a powder or cake, which does not evolve any odor, or readily take fire, and therefore needs not to be preserved under water. When heated to 140°, and even to a temperature a little short of 482°, it refuses to burn; and, in fact, it is questionable if phosphorus in this condition will take fire at all; though at 482°, and above, the red variety passes back again to the ordinary or yellow phosphorus, and then bursts into flame. Moreover, amorphous phosphorus is insoluble in alcohol, ether, the fixed and volatile oils, and even in bisulphuret of carbon. Probably the most striking difference between these two forms of the same substance is, that ordinary phosphorus is a deadly poison, as is too often evidenced in the death of children from sucking the ends of lucifer-matches; while the red or amorphous phosphorus is not known to be poisonous at all.—Besides the two varieties already mentioned, which are best known, there are *black phosphorus*, *white phosphorus*, and *scaly phosphorus*. The only manner of accounting for the difference of properties

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evinced by ordinary and red phosphorus, is to refer the change to an absorption of heat during the passage of the ordinary into the red variety. It is an observed fact that such absorption or disappearance of heat does then take place; while, when the red phosphorus is heated till it passes back to the ordinary kind, a very rapid disengagement of heat occurs.

Sulphur furnishes another example of A. In the ordinary condition of roll sulphur, it is a pale yellow, brittle, crystalline solid; insipid to taste, odorless when cold, and evolving a peculiar odor when heated or rubbed. It dissolves in small quantity in turpentine and the fixed oils, and to the extent of 35 per cent. in bisulphuret of carbon. When common sulphur is heated to 232°, it fuses, and forms a thin, yellow, limpid liquid like olive-oil; at 480° it passes into a thick, dark-brown, viscid liquid, resembling in consistence ordinary treacle; and if, at this stage, it be poured into water, the sulphur forms itself into a thread-like mass or net-work, possessing great elasticity, like india-rubber, not at all brittle, and so soft that it can be molded by the fingers into casts and seals. Again, this elastic form of sulphur is not soluble in turpentine and the fixed oils, or even in bisulphuret of carbon. There are also other allotropic forms of sulphur.

Oxygen may be taken as a third illustration of the same doctrine. In the ordinary form in which oxygen exists in the atmosphere and elsewhere, it is a gas with no odor, no bleaching properties, and no disinfectant powers. To a certain extent, it oxidizes metals, etc.; but comparatively, it may be regarded as a feeble oxidizing agent. By several processes—namely, the introduction of a heated glass rod into a jar containing ordinary air and a little ether; or the presence of clean-scraped sticks of phosphorus in a glass vessel with a confined portion of air; or the passage of electric discharges through or round a glass tube or bottle with air—the oxygen of the atmospheric air is transformed into an allotropic form called *ozone*. In the latter condition, oxygen possesses a very strong and peculiar odor, long known as the electrical odor; has great bleaching powers, and is regarded as the agent in the air which bleaches clothes spread out on grass; and possesses such powerful disinfecting properties, that tainted meat introduced into ozonized air has the disagreeable odor destroyed, and smells fresh when taken out. Ozone is doubtless the great natural agent which removes many deleterious gases and vapors, and destroys infectious matter floating in or diffused through the air. See OZONE.

ALLOW, *v.* *äl-low'* [*F. allower*, to allow, to assign—from *L. ad, locārē*, to place or to let, see *note—lit.*, to place to]: to admit; to grant; to permit; to own; to deduct. ALLOW'ING, *imp.* ALLOWED, *pp.* *äl-lowd'*, in *OE.*, privileged. ALLOWABLE, *a.* *äl-low'ä-bl*, that may be permitted; not improper or unlawful. ALLOW'ABLY, *ad.* *-bā*. ALLOW-ABLENESS, *n.* *äl-low'ä-bl-nēs*, lawfulness; fitness. ALLOW-ANCE, *n.* *äl-low'äns*, the act of allowing; permission; a settled rate; a salary; in *OE.*, approval. *Note.*—*Allow*, *v.*

ALLOWANCES—ALLOY.

[OF. *alouer* or *allouer*, to approve: mid. L. *adlaudārē*, to apportion to—from L. *ad*, *laudārē*, to praise]: In *OE.*, means, to praise; to approve of highly: this sense of the word is common in old authors, and is much earlier in use than the former; the senses, however, are not always easily distinguished, and constantly run into each other.—*SYN.* of 'allow': to permit; suffer; tolerate; grant; bestow; afford; concede; in *OE.*, to justify;—of 'allowance': stipend; salary; wages; hire; pay.

ALLOWANCES, OFFICERS': settled rates, or sums, besides the recognized pay, granted in the British army—and to various degrees in the armies of other countries—to military officers, for special duties, or under certain specified circumstances. In the U. S. army and navy, certain additions to the pay of officers are given by law; and these are set forth in the army and navy regulations, and in the U. S. revised statutes. These include fuel, quarters, rations, forage, mileage when travelling under orders, and not furnished with transportation by the quartermaster's department, and other additions to pay, in money or kind, as stipulated. Officers of the army and of volunteers assigned to duty which requires them to be mounted, are, during the time they are employed on such duty, entitled to receive the pay, emoluments and A. of cavalry officers of the same grade respectively. See **PAY: PENSION.**—The daily food served out at the public expense, which is called a *ration* by soldiers, is more usually known to sailors as an *allowance*. See **RATION.**

ALLOWAY KIRK, *al'lo wā*: an old ruined church in the parish of Ayr, near the mouth of the Doon, celebrated in Burns's *Tam o' Shanter*. At very short distances from it are the cottage in which the poet was born, the monument erected to his memory in 1823, and 'the Auld Brig o' Doon,' over which *Tam o' Shanter* made his escape.

ALLOXAN, *n.* *āl-lōk'săn* [made up of syllables in *all*-antoin and *oxalic acid*]: an oxidation product of uric acid. **ALLOXANTIN**, *n.* *āl-lōk'săn-tîn*, a body formed by the reduction of alloxan.

ALLOY, *v.* *āl-loi'* [*F.* *aloi*; *It.* *lega*, standard, quality: *L.* *ad*, *lex*, the law or rule: *Sp.* *ley*, the proportion of silver found in ore]: to mix metals for coin according to rule or law; to mix any metal with another, generally with one less valuable; to reduce or lessen by mixture: *N.* a baser metal mixed with a finer; a mixture of two or more metals; a mixture of a metal with mercury is called an *amalgam*; evil mixed with good. **ALLOY'ING**, *imp.* **ALLOYED**, *pp.* *āl-loi'd*. **ALLOYAGE**, *n.* *āl-loi'āj*, the act of mixing metals; a mixture of different metals.

ALLOY, in Chemistry: a mixture of two or more metals, either natural or produced artificially by melting them together. The A., or mixture, has often different properties from the component metals, and bears a distinct name. Thus, bell metal is an A. of copper and tin; tombak, of copper and zinc; brass, of copper, with a larger proportion of zinc, etc. Alloys are generally harder than the

ALLOY.

metals that compose them, and this is the motive for alloying the precious metals. Both gold and silver, when pure, are very soft, and easily worn away by use; and therefore a certain proportion of copper is added, to give these metals the requisite hardness. In this case the word 'alloy' signifies the inferior metal added, and not the mixture. For coin, the proportion of copper to be added is fixed by law (see the following article), and differs in different states. It has been found by experiment that $\frac{1}{10}$ of A. gives the greatest durability. This is exactly the proportion in British gold coin, a pound troy of the metal containing 11 parts gold and 1 part copper. The A. in British silver coin is somewhat less, being 18 dwt. in the pound instead of 20 dwt. For convenience in reckoning, the standard of the coinage in France, and other countries that adopt its monetary system, as well as in the United States, is made $\frac{1}{10}$ pure metal and $\frac{9}{10}$ A., usually stated 900 (in 1,000) parts fine. British gold and silver standards similarly stated would be 917 and 925 respectively. Gold is sometimes alloyed with silver, or with a mixture of silver and copper. The color of gold and silver is affected by the nature and amount of the A. A strong A. of copper makes gold red; silver, green; and a still stronger of silver, a bright yellow. A compound of mercury with another metal is an *Amalgam* (q.v.).

Alloys seldom possess the density which theory or calculation from the specific gravity of their constituents would indicate. Thus, many alloys possess a greater density than the mean density of their constituents, while others have a less density. The increase in density of the A. indicates that the metals have contracted; in other words, that the metallic molecules have approached each other more closely; while the decrease in density denotes a separation of the molecules to greater distances from each other.

ALLOYS
which exhibit a greater density
than the mean density of the
metals composing them.

Gold	and	Zinc.
"	"	Tin.
"	"	Bismuth.
"	"	Antimony.
"	"	Cobalt.
Silver	"	Zinc.
"	"	Tin.
"	"	Bismuth.
"	"	Antimony.
Copper	"	Zinc.
"	"	Tin.
"	"	Palladium.
"	"	Bismuth.
Lead	"	Antimony.
Platinum	and	Molybdenum.
Palladium	"	Bismuth.

ALLOYS
which exhibit a less density than
the mean density of the metals
composing them.

Gold	and	Silver.
"	"	Iron.
"	"	Lead.
"	"	Copper.
"	"	Iridium.
"	"	Nickel.
Silver	"	Copper.
Iron	"	Bismuth.
"	"	Antimony.
"	"	Lead.
Tin	"	Lead.
"	"	Palladium.
"	"	Antimony.
Nickel	"	Silver.
Zinc	"	Antimony.

The strength of cohesion of an A. is generally greater than that of the mean cohesion of the metals contained therein, or even than that of the most cohesive of its constituents.

ALLOY.

Thus, the breaking weight of a bar of copper or tin (meaning the longitudinal strain that it can bear) is very much lower than the breaking weight of a bar composed of an A. of tin and copper. The following tables represent the

COHESION OF METALS.

	Bar, one inch square, breaks with lbs.
Barbary Copper.....	22,570
Japan	20,272
English Block Tin.....	6,650
“ “	5,322
Banca Tin.....	3,679
Malacca Tin....	3,211
Bismuth.....	3,008
Zinc.....	2,689
Antimony.....	1,060
Lead.....	885

When any two of the above metals combine together, they generally—though not always—yield an A. which is much stronger than we should expect; thus the

COHESION OF ALLOYS.

	Bar, one inch square, yields with lbs.
10 parts of Copper and 1 part of Tin.....	32,093
8 “ “ 1 “ “	36,088
6 “ “ 1 “ “	44,071
4 “ “ 1 “ “	35,739
2 “ “ 1 “ “	1,017
1 “ “ 1 “ “	725
4 “ English Tin and 1 “ Lead.....	10,607
4 “ Banca “ “ 1 “ Antimony....	13,480
4 “ “ “ “ 1 “ Bismuth.....	16,692
4 “ English Tin “ 1 “ Zinc.....	10,258
4 “ “ “ “ 1 “ Antimony....	11,323

The power of conducting electrical currents is not so great in an A. as the mean conducting power of its components.

The composition of the more commonly occurring and commercially important alloys, is as follows: Plumber's solder, 1 tin and 2 lead; soft solder, 2 tin and 1 lead; common pewter, 4 tin and 1 lead; gun-metal, 9 copper and 1 tin; bronze, 9 copper and 1 tin and zinc; cymbals and Chinese gongs, 4 copper and 1 tin; bell-metal, 3 copper and 1 tin; speculum metal, 2 copper and 1 tin; pot-metal or cock-metal, 2 copper and 1 lead; gilding-metal, 16 copper and 1 to 1½ zinc; Mannheim gold—pinchbeck or bath-metal, 16 copper and 4 zinc; Bristol brass, for soldering, 16 copper and 6 zinc; ordinary brass, for casting, 16 copper and 8 zinc; Muntz sheathing-metal, 16 copper and 10½ zinc; spelter solder, for copper and iron, 16 copper and 12 zinc; spelter solder, for brass-work, 16 copper and 16 zinc; Mosaic gold, 16 copper and 16½ zinc; hardest silver solder, 4 silver and 1 copper; hard silver solder, 3 silver and 1 copper; soft silver solder, 2 silver and 1 copper; German silver, 100 copper, 60

ALLOY—ALL-SAINTS'-DAY.

zinc, and 40 nickel; type-metal, ordinary, 15 lead, 4 antimony, and 1 tin, or 14 lead, 5 antimony, and 1 tin—small types, 4 lead and 1 antimony—large types, 6 lead and 1 antimony; stereotype metal, 48 lead, 6 antimony, and 1 tin; Britannia metal, 50 tin, 4 antimony, 4 bismuth, and 1 copper.

ALLOY, or **ALLAY**, in Law: the inferior metal mixed with gold and silver in the coinage. The standard for both gold and silver coins of the United States is prescribed by statute to be such that of 1,000 parts by weight, 900 shall be of pure metal and 100 of A. The A. of the silver coins must be copper; that of the gold coins of copper, or of copper and silver, but the silver must in no case exceed one-tenth of the whole A.

In Britain, gold and silver to be converted into sovereigns, half-sovereigns, shillings, and the other current silver coins, must be of the true standard, or of *sterling* quality, as it is called; and by the statute 25 Edward III. c. 13, all the coin of the kingdom must be made of such sterling metal. By the 56 Geo. III. c. 68, gold coin—with certain exceptions recited in the act—is declared to be the only legal tender for payments, and that such gold coin shall be of the weight and fineness prescribed by the indenture with the Master of the Mint; and according to the standard thus indicated, the pound troy of gold, consisting of 22 carats—or twenty-fourth parts—fine, and two of A., is divided into forty-four guineas and a half, of the present value of twenty-one shillings each. In the case of silver, the pound troy is declared by the same act—extended by a recent statute, the 12th and the 13th Vict. c. 41—to consist of eleven ounces two pennyweights of fine silver, and eighteen pennyweights of A., and in weight to be divided into sixty six shillings. The regulation of the coinage forms part of the prerogative of the crown, although parliament also exercises a control over it; indeed, since the Revolution, the coinage has been chiefly regulated by the authority of parliament. See **COINAGE** and **MINT**.

ALL SAINTS' BAY: in the province of Bahia, Brazil: 12°—13° s. lat., 38—39° w. long. It forms a superb natural harbor, in which the navies of the whole world might anchor. Its length from n. to s. is 37 m.; its breadth from e. to w. 27. It contains several islands, the largest of which, Itaparica, is 18 m. long, and 3 broad. The entrance to the bay is easy. The town of Bahia (q.v.) lies just within it, on the right hand.

ALL-SAINTS'-DAY: in old English, All-Hallows, All-Hallowmas, or simply Hollowmas; a festival of the Rom. Cath. Church, introduced because of the impossibility of keeping a separate day for every saint. As early as the 4th c., on the cessation of the persecution of the Christians, the Sunday after Easter was appointed by the Greek Church for commemorating the martyrs generally; and in the Church of Rome a similar festival was introduced about 610, when the old heathen Pantheon (the present Rotunda, or Santa Maria dei Martiri) was consecrated, March 18, to Mary and all the Martyrs. But the real festival of All

ALL SOULS' COLLEGE—ALL-SOULS'-DAY.

Saints was first regularly instituted by Gregory IV., in 836 and appointed to be celebrated Nov. 1. It was admitted into England about 870. The choice of the day was doubtless determined by the fact, that Nov. 1, or rather the eve or night preceding it, was one of the four great festivals (Feb. 1, May 1, Aug. 1, and Nov. 1) of the heathen nations of the North; for it was the policy of the church to supplant heathen by Christian observances. See BELTANE and HALLOW-EVE.

ALL SOULS' COLLEGE, Oxford: founded 1437 by Henry Chichele, sometime Fellow of New College, and successively Bishop of St. Davids and Abp. of Canterbury, for a warden, 40 fellows, 2 chaplains, and clerks. However, by an ordinance framed by the commissioners appointed under the statute 17 and 18 Vict. c. 81, ten of the fellowships have been suppressed in order to the endowment of two professorships, to be called 'the Chichele Professorship of International Law and Diplomacy,' and 'the Chichele Professorship of Modern History.' The remaining fellowships are open to all, irrespective of birth (date or place), position, or profession, provided only the candidates have passed all the examinations required for B.A., and have obtained either some prize or scholarship open to general competition, or a 'first-class' place in one of the public examinations of the university. The candidates must be examined also in Jurisprudence and Modern History. The patronage includes 19 benefices, in Kent, Oxford, Essex, Gloucester, Berks, Bucks, Herts, Northampton, Salop, Surrey, and Wilts, of an annual value of £7,925. In 1882, this college had 110 members on its books.

ALL-SOULS'-DAY: a festival of the Rom. Cath. Church, which falls on Nov. 2. The object of it is, by prayers and almsgiving to alleviate the sufferings of the souls in purgatory. It was instituted in the monastery of Clugny, 998, and the following is the account given of its origin: A pilgrim returning from the Holy Land, was compelled by a storm to land on a rocky island somewhere between Sicily and Thessalonica. Here he found a hermit, who told him that among the cliffs of the islands was situated the opening into the under world, through which huge flames ascended, and the groans and cries of souls tormented by evil angels were audible. The hermit had also frequently heard the complaints and imprecations of the devils, at the number of souls that were torn from them by the prayers and alms of the pious; they were especially enraged, he said, against the abbot and monks of Clugny. The pilgrim on his arrival acquainted Odilo, Abbot of Clugny, with what had come to his knowledge, and the abbot thereupon appointed the day after All Saints to be kept in his monastery as an annual festival for 'All Souls.' The observance was quickly adopted by the whole Roman Catholic world. By another account, the scene of the incident is transferred to Sicily, and the institution to the year 998.

In some parts of the w. of England it is still 'the custom

ALLSPICE—ALLSTON.

for the village children to go round to all their neighbors *souling*, as they call it—collecting small contributions, and singing the following verses, taken down from two of the children themselves:

Soul! soul! for a soul-cake;
Pray, good mistress, for a soul-cake.
One for Peter, two for Paul,
Three for Them who made us all.

Soul! soul! for an apple or two;
If you've got no apples, pears will do.
Up with your kettle, and down with your pan;
Give me a good big one, and I'll be gone.

The soul-cake referred to in the verses is a sort of bun, which until lately, it was an almost general custom for people to make, and to give to one another on Nov. 2.—*Notes and Queries*, First Series, vol. 4.

ALLSPICE, n. *aul spis* [*all* and *spice*]: name frequently given to the kind of spice called PIMENTA (q.v.) or Jamaica pepper, the fruit of *Eugenia pimenta* and *E. acris*; ord. *Myrtacæ*. The name originated in its being supposed to combine the flavor of different spices, particularly cinnamon, nutmeg, and cloves.—The name CAROLINA A., or AMERICAN A., is given to the aromatic bark of *Calycanthus floridus* (see CALYCANTHUS), which is employed in the United States as a substitute for cinnamon.—The berries of *Benzoïn odoriferum*, natural order *Lauracæ*, are said to have been used for A. in the same country during the war with Great Britain.

ALLSTON, *awl'stŏn*, WASHINGTON: one of the best known of the painters and poets of America, 1779-1843, July 8; b. at Georgetown, S. C.: He at first studied medicine, but through his acquaintance with the painter Malbone, turned to art. Going to London, he became a friend of his countryman West, then pres. of the Academy. In 1804 he went to Rome, where he lived for some years in the closest intimacy with J. Vanderlyn, Thorwaldsen, and Coleridge. After a short stay in America, to which he returned in 1809, he once more visited England in 1811, when he gained the 200-guinea prize of the British Institution. In 1817 he went to Paris with Leslie, and the year after returned to America. In 1819 he was elected an Associate of the Royal Acad. of London. He now permanently fixed his residence at Cambridgeport, near Boston, where he lived, cultivating his art and the muses till his death. His pictures are very numerous. The subjects are mostly taken from Scripture, such as *Jacob's Dream*, *Elijah in the Wilderness*, *Saul and the Witch of Endor*, *The Deliverance of Peter out of Prison*, etc. The style of A. is noble, his ideas are imaginative, and many of his paintings evince a true poetic spirit. In coloring he comes nearer the old masters than most modern painters do. Among his printed works the most remarkable is the poem, *The Sylphs of the Seasons* (Lond., 1813), and the art novel, *Monaldi* (Boston, 1842). His *Lectures on Art* appeared posthumously (1850).

ALLUDE—ALLYGURH.

ALLUDE, v. *āl-lód'* [L. *allūdērē*, to play or sport with; to laugh at—from *ad, lūdo*, I play—*lit.*, to play or sport at]: to refer to something not particularly mentioned; to hint at. **ALLU'DING**, imp. **ALLU'DED**, pp. **ALLUSION**, n. *āl-ló'zhūn*, a reference to something not mentioned particularly; a hint. **ALLUSIVE**, a. *āl-ló'siv* [L. *allu'sus*, played or sported with]: having reference to something but vaguely noticed before. **ALLU'SIVELY**, ad. *-lī*.—**SYN.** of 'allude': to refer; hint; suggest; intimate.

ALLURE, v. *āl-lór'* [L. *ad, to*; F. *leurre*, a bait: Ger. *ludern*, to entice (see **LURE**)]: to entice by a bait; to tempt by the offer of something good; to entice, in a good or bad sense. **ALLU'RING**, imp.: **ADJ.** enticing. **ALLURED**, pp. *āl-lórd'*. **ALLUREMENT**, n. *āl-lór'měnt*, some real or supposed good that attracts; temptation; enticement to pleasure. **ALLU'ER**, n. one who. **ALLU'RINGLY**, ad. *-lī*.—**SYN.** of 'allure': to entice; tempt; seduce; decoy; attract.

ALLUSION, **ALLUSIVE**: see under **ALLUDE**.

ALLUVION, *āl-ló'vī-on*: a legal term, signifying land gained from the sea by the washing up of sand and earth so as to make it *terra firma*. The right of property thus arising is regulated as follows. It is a part of the legal definition of A. that the addition should be so gradual that no one can detect the exact amount added at each moment of time. The owner of the bank thus increased by A. is entitled to the addition. But in case of sudden increase, as by a freshet, or other immediate exercise of power by a river or stream, if soil is taken from one man's estate and carried to that of another, the property belongs to the first owner. Such a movement of land is termed *avulsion*.

ALLUVIUM, n. *āl-ló'vī-ūm*, **ALLUVIA**, plu. *āl ló'vī-ā* [L. *alluvium*—from *ad lūvo* or *lūō*, I wash: F. *alluvion*]: term originally applied to deposits supposed to have been formed subsequently to the Flood, while Diluvium (q.v.) included its products. In modern geological classification, these two terms, in this sense, have been abolished, as their connection with the Deluge is denied. The diluvial and alluvial deposits are included under the Pleistocene formation (q.v.). The name is now given to those deposits of mud, soil, sand, gravel, etc., which are brought down by streams and rivers and spread over lower lands; also **ALLUVION**. **ALLUVIAL**, a. *āl ló'vī-āl*, deposited or laid down by means of water. See **DELTA**: **DENUATION**.

ALLY, v. *āl-lī'* [F. *allier*, to mix: OF. *alier*, to bind to—from *a, to*; *lier*, to bind—from L. *allīgārē*, to bind to—from *ad, ligo*, I bind]: to bind to something; to unite, *as families by marriage*; to bind together in friendship, *as states with states*: N. one that is allied; a confederate. **ALLIES**, n. plu. *āl-līz'*, countries or persons united by treaty or agreement; confederates. **ALLY'ING**, imp. **ALLIED**, pp. *āl-līd'*. **ALLIANCE**, n. *āl-lī'āns*, union; confederacy; association.

ALLYGURH, *āl-lī'gūr'*: a fort in the dist. of the same name in India; lat. 27° 56' n., long. 78° 8' e., on the route between Agra and Delhi, being 55 m. from the former, and

ALLYL—ALMADEN.

74 from the latter. Partly to this commanding situation, and partly to the strength derived from its surrounding marshes, it owes any importance that it possesses. It was stormed by the British in 1803, being then the principal dépôt of the French party in the Doab—an exploit of sufficient consequence to be commemorated by a medal in 1851. But within six years after 1851, A. became the arena of a still more desperate struggle. Ten days after the outbreak at Meerut, the native troops in garrison mutinied. Fortunately, the Europeans escaped with comparatively little sacrifice of life. But the temporary loss of the place almost cut off the communications between the s.e. and the n.w.

The dist. of ALLYGURH (or *Aligarh*), in the n.w. Provinces, has 1,955 sq. m.; pop. (1881) 1,021,187.

ALLYL, n. *âl'il* [L. *allium*, garlic]: a substance of an intensely fetid odor, obtained from the oil of garlic. A. is an organic radical, represented when in combination by C_6H_5 , and when in the free state by $C_{12}H_{10}$. The first compound discovered was iodide of A., which was obtained by Berthelot and De Luca in 1854; two years later, they isolated A.; and shortly afterwards, Wertheim demonstrated its existence in the oils of mustard and garlic. See GARLIC, OIL OF.

ALMA, *âl'mâ*: a river in the Crimea, rising at the foot of the Tchadir Dagh, and flowing westward into the Bay of Kalamita, about half way between Eupatoria and Sebastopol. On the steep banks of this stream, through the channel of which the British troops waded amid a shower of bullets, a brilliant victory was won on the 20th of Sept., 1854, by the allied armies of Britain and France, under Lord Raglan and Marshal St. Arnaud, over the Russian army commanded by Prince Menschikoff.

AL'MACKS: a suite of assembly-rooms in King street, St. James's, London; built in 1765 by Almack, a tavern-keeper, who, it is said, was originally a poor Scottish Highlander, named M'Call. As a preparatory step to rising into importance in London, he inverted the syllables of his name. They are now generally called Willis's Rooms, from the name of the present proprietor. The name of A. is chiefly associated with the balls that have, since the opening of the rooms, been held there under the management of a committee of ladies of high rank; and has become synonymous with aristocratic exclusiveness. The rooms are also much used for dinners and concerts.

ALMADA, *âl-mâ'dâ*: town of Portugal, province of Estremadura, on the s. bank of the Tagus, opposite Lisbon, and distant from it less than 2 m. There is frequent steam communication with Lisbon. A. is built upon a height, from the summit of which, above the town, there is a magnificent view of Lisbon and the Tagus. A. has a strong castle on a rock. The surrounding country is well cultivated. A. has long been celebrated for its figs. Near it is the gold mine of Adissa. Pop. 5,500.

ALMADEN, or ALMADEN DEL AZOGUE, *âl-mâ-dên' dël â-tho'gâ*: town in Spain, 50 m. s.w. of Ciudad Real; the *Cisapona Cetobriz* of the Romans. It is situated in the chain

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of the Sierra Morena. Pop. 8,000. It is famous for its exceedingly rich quicksilver mines, producing annually about 1,500,000 lbs. These mines were worked by the ancient Iberians; afterwards by the Romans. They were rented by the Fuggers of Augsburg in the 16th c., but were taken under the care of the Spanish government in 1645. Some years since, the firm of Rothschild undertook the working of these mines. There is a school of mines in the place.

ALMAGEST, *āl'mā-jēst*: name given by the Arabs to the great work of Ptolemy the astronomer (q. v.).

ALMAGRO, *āl-mā'grō*: town of New Castile, Spain, province of Ciudad Real, 13 m. e. s. e. from Ciudad Real. It is on a high arid plain, but is very well built, with wide paved streets, a fine square, and a public walk lined with trees. Its most noteworthy building is an old church of beautiful architecture. It is a place of greater activity than most Spanish towns, and its whole appearance indicates prosperity. Brandy, soap, and earthenware are manufactured, and lace-making gives employment to about 8,000 women in A. and the neighboring villages. The surrounding country is celebrated for its mules. There are two great annual fairs, at which mules and lace are sold. Pop. (1877) 8,628.

ALMAGRO, *āl-mā'grō*, **DIEGO D'**: 1475-1538: a Spanish *conquistador*—i. e., adventurer—in the conquest of South America, a foundling, who derived his name from the town near which he was found. With many other adventurers, he went, as was common in those days, to seek his fortune in the new world which Columbus had opened. There he amassed wealth by plunder, and became one of the most prominent persons in the new colony of Darien, when he was persuaded to join Pizarro in his attack on Peru. The undertaking had astonishing success. He was now appointed, in the absence of Pizarro, who had returned to Spain with rich presents, governor of the conquered country, and received permission from the Spanish court to conquer for himself a special province s. of the territory subdued by Pizarro. In 1534, therefore, he marched on Chili, penetrated deeply into the land, and returned in 1536, just when the Peruvians had flown to arms under their young Inca, Mungo Capac, and shut up the Spaniards in Cuzco and Lima. As these towns lay s. of Pizarro's district, they were claimed by A. He dispersed the Peruvian army before Cuzco, and advanced with his forces against Lima, hoping to make himself sole master of the country. But the crafty Pizarro contrived, by means of a truce, to gain time for collecting his forces. In a desperate engagement near Cuzco, 1538, April 6, A. was defeated and taken prisoner. He was condemned to death; and on the 26th of the same month, he was strangled in prison, and his corpse beheaded in the market-place of Cuzco. His son, Diego d'A., gathering together several hundred of his father's followers, stormed the palace of Pizarro, whom he assassinated (1541); he then proclaimed himself captain-general of Peru; but the friends of the murdered governor resisting his claims, Baca de Castro was sent out from Spain, as supreme arbiter, to quell all

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disturbances. Diego was now requested to submit; and on his refusing, was attacked by the troops of Baca, when the bloodiest battle took place that had ever been known in America (1542). Diego, having been defeated and taken prisoner, was put to death with forty of his companions.

ALMALEE, or ALMALI, *âl-mâ-lî*: large town of Asiatic Turkey, in the vilayet of Konia. It is situated on the river Myra, about 25 m. from the sea, and is frequented by European merchants from Smyrna, etc., who purchase the various products of the place. A. has numerous mills propelled by water, tan yards, dye works, and factories. The inhabitants are very industrious, and everywhere may be seen indications of their prosperity—in the clean and comfortable houses, neat apparel, excellent roads, fences, bridges, etc. A. is built in a picturesque valley at the edge of a large plateau, 5,000 ft. above the sea, and is embosomed in gardens, which, with the minarets and lofty poplars interspersed through the town, give it a striking appearance. Pop. said to be 12,000.

ALMA-MATER, *âl-mâ-mâ'ter* [L. fostering mother]: a name applied by one to the university or college at which he has studied. The word *Alma* (nourishing, sustaining, or kind) was applied by the Latin authors to such of the deities as were friendly to men—Ceres, Venus, etc., and also to the earth, the light, the day, wine, and the soil.

AL-MAMUN, or AL-MAMOUN, *âl-mâ-môn*, ABUL-ABBAS-ABDALLAH: 786-833; a renowned caliph of the Abbasides (q.v.), son of Harun Al-Raschid. Harun was succeeded by his son Amin as caliph of Bagdad. Al Mamun was dissatisfied with his treatment, and a struggle arose between the brothers which lasted for five years. Amin was slain, and was succeeded by Al-Mamun, 813, Oct. 4. The early years of his reign were disturbed by factions and revolts, but by his energetic and prudent measures, he succeeded in bringing about a period of peace. He now devoted himself to the cultivation of science and literature throughout his empire, and made Bagdad the centre of learning and intelligence. He founded a college at Khorassan, and built observatories at Bagdad and Kassium (now Damascus), and he succeeded in determining the inclination of the ecliptic, had a degree of the meridian measured on the plain of Shinar, and constructed accurate astronomical tables. He had many books translated into Arabic, from the Greek, Persian, and other languages, and drew about him learned men of all creeds. His liberalism ended in his conversion to the faith of the Motasali, who recognized the free-will of man, and denied the eternity of the Koran. In the latter years of his reign he was involved in hostilities with the Greek emperor Theophilus, and in revolts in various parts of the Arabian empire. He died near Tarsus, and was succeeded by his brother Motassem. He was the author of *Inquiries into the Koran*, and other books.

ALMANAC.

ALMANAC, n. *âl'mă-năk* [a supposed corrupted form of **AS.** *all-moon-heed*, or *allmonaght*, a rude tracing or representation, of the course of the moon: **Sp.**—from **Ar.** *almanac*, a calendar: prov. **Ar.** *al-manākh*, climate or temperature: *Note.*—Brachet says, mid. **L.** *almanāchus*—from **Gr.** *almēnācha*, was used in the fourth century by Eusebius for an almanac. The text gives the most probable origin]: A book or table containing a calendar of the civil divisions of the year, the times of the various astronomical phenomena, the time of sun-rising and setting, the changes of the moon, the tides, and other useful or entertaining information, Till a comparatively modern date, this additional matter consisted of astrological predictions and analogous absurdities; it now embraces, in the best almanacs, a wide variety of useful notes and information, chronological, statistical, political, agricultural, etc.—The Alexandrian Greeks had almanacs. The time at which they first appeared in Europe is not precisely known. The oldest of which copies (in manuscript) still exist, are of the 14th c.; there are specimens in the libraries of the British Museum and of Corpus Christi College, Cambridge. The earliest European A. worthy of notice was compiled by the celebrated astronomer Purbach, and appeared between the years 1450 and 1461; but the first *printed* A. was that composed by his pupil, Regiomontanus, for the thirty years 1475–1506, for which he received a munificent donation from Mathias Corvinus, king of Hungary. Bernard de Granolachs, of Barcelona, commenced the publication of an A. in 1437; the printer Engel, of Vienna, in 1491; and Stöffler, of Tübingen, in 1524. Copies of these are now very rare. In 1533 Rabelais published, at Lyons, his A. for that year, and renewed the publication in 1535, 48, and 50. The fame and popularity of the celebrated astrologer, Nostradamus, who prophesied minutely the death of Henry II. of France, the execution of Charles I. of England, the great fire of London, the Restoration, etc., gave such an impulse to the publication of predictions, that, in 1579, Henry III. of France prohibited the insertion of any political prophecies in almanacs—a prohibition renewed by Louis XIII. in 1628. Before this, in the reign of Charles IX., a royal *ordonnance* required every A. to be stamped with the approval of the diocesan bishop.

Prophetic almanacs still circulate to an incredible extent in France in the rural districts, and among the uneducated. The most popular of all these is the *Almanach Liégeois*, a venerable remnant of superstition. It was first published at Liege—according to the invariable title-page which takes no note of time—in 1636, by one Matthieu Laensbergh, whose existence, however, at any time seems very problematical. The *Almanach Liégeois* is a most convenient one for those who are unable to read, for by certain symbols attached to certain dates, the most unlettered persons can follow its instructions: thus the rude representation of a phial announces the proper phase of the moon under which a draught of medicine should be taken; a pill-box designates the planet most propitious for pills; a pair of scissors points out the proper period for cutting hair, a lancet for letting

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blood. Of course, amid innumerable predictions, some may naturally be expected to come to pass. So in 1774, this A. predicted that in the April of that year a royal favorite would play her last part. Madame Dubarry took the prediction to herself, and repeatedly exclaimed: 'I wish this villanous month of April were over.' In May Louis XV. died, and Madame Dubarry's last part was really played. The credit of old Matthieu was established more firmly than ever. In 1852, a number of commissioners, appointed by M. Maupas, minister of police, having examined between 7,000 and 8,000 of the national chapbooks, which included a great number of almanacs, pronounced them so deleterious that it became necessary forcibly to check their circulation. Although still in vogue among the ignorant peasantry, it is gratifying to learn that their popularity is greatly on the wane, and that various periodicals on a better plan have started up in France of late years.

In England, so far was any restraint from being put upon the publication of prophetic almanacs, or 'Prognostications,' as they were usually called, that the royal letters-patent gave a monopoly of the trade to the two universities and the Stationers' Company, under whose patronage, and with the *imprimatur* of the Abp. of Canterbury, such productions as *Moore's A.* and *Poor Robin's A.* flourished vigorously; although 'it would be difficult to find, in so small a compass, an equal quantity of ignorance, profligacy, and imposture, as was condensed in these publications.' The memory of Partridge, long employed as the prophet of the Stationers' Company, is preserved in the lively diatribe of Swift, writing under the name of Bickerstaff. In 1775, a decision of the Court of Common Pleas, in favor of a bookseller named Carnan, abolished the monopoly of the Stationers' Company. In 1779, Lord North brought in a bill renewing their privileges. After a powerful speech against the measure by Erskine, who exposed the pernicious influence of the productions published under the monopoly, it was rejected. The Stationers' Company, however, still maintained their ground by buying up all rival almanacs; and it was not until the publication, 1828, of the *British A.* by the Soc. for the Diffusion of Useful Knowledge, that the eyes of the English public became opened to the irrational and deleterious nature of the commodity which their own indifference or folly, as much as the selfishness of their purveyors, had hitherto maintained in existence. The success of this admirable publication stimulated the Stationers' Company to publish the *Englishman's A.* The *British A.* is itself now published by the Stationers' Company. *Whitaker's Almanack* is a valuable compendium of varied information.

In Scotland the earliest almanacs seem to have been produced about the beginning of the 16th c. Shortly after the beginning of the 17th c., the Almanacs or 'Prognostications' published at Aberdeen had begun to establish that celebrity which is hardly yet extinct. About 1677, they were sold for a *plack* each; and the annual circulation

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amounted, on an average, to 50,000 copies. In 1683, appeared a rival publication, under the title of *Edinburgh's True Almanack, or a New Prognostication*. For a long time the Scottish almanacs continued, like all others of that age, to contain little besides a calendar, with a list of fairs, and—what constituted the great attraction—predictions of the weather. But something more instructive and comprehensive became requisite, and the *Edinburgh A.* seems to have been among the first to respond to this requirement of advancing civilization; for, by various additions, such as a list of Scottish members of parliament, it had, in 1745, been extended from the original 16 pages to 36. In twelve years from that date it had swelled to 72 pages; in 1779, it had reached 252 pages. Since 1837, it has been published under the title of *Oliver and Boyd's New Edinburgh A.*, and now extends to above 1,000 pages. It contains an amount of information on all public matters, especially on those connected with North Britain, which, in its completeness, leaves little to be desired.

What *Oliver and Boyd's Edinburgh A.* is to Scotland, is *Thom's Irish A.* to Ireland—a work not less excellent, and even more extensive.

Almanacs containing astrological and other predictions are still published in Great Britain, but their influence is extremely limited, even among the most ignorant portion of the community, and their contents are fitted to excite amusement rather than any stronger emotion.

Of important national almanacs are the French *Almanach Impérial*, begun 1679, a bulky octavo volume, full of useful information; the *Belgian Royal A.*, very similar in character; the *Prussian Royal A.*; and the *American A.*, a very meritorious publication. The *Almanach de Gotha*, begun in 1763, has a European, or rather a cosmopolitan, character. See GOTH, A. DE.

The most important astronomical A. published in Britain is the *Nautical A.*, projected by the astronomer-royal, Dr. Maskelyne, and first published with the authority of government, 1767. After his death it gradually lost its character, and 1830, in consequence of the numerous complaints made against it, the government requested the Astronomical Soc. to pronounce upon the subject. The suggestions of the Society were adopted, and, in 1834, the first number of the new series appeared, with such additions and improvements as the advanced state of astronomical science rendered necessary. Still older than this A. is the French *Connaissance des Temps*, commenced in 1679 by Picard, and now published under the authority of the *Bureau des Longitudes*. Its plan is similar to that of the *Nautical A.*, but it contains a larger amount of original memoirs, many of them of great value. Equally celebrated is the Berlin *Ephemeris*, published so long under the superintendence of the late Prof. Encke, being an improvement on the *Astronomisches Jahrbuch*, conducted by his predecessor Bode. Another kind of A., which has especially flourished in Germany and France, belongs rather to the class of publications known in Britain as *Annals*. Such have been the *Almanach des Muses*, des

ALMANDINE—ALMANSA.

Dames, Populaire, Icarien, Napoléonien, etc., the latter of which were specially devoted to the interests of particular parties, political or religious. Of this kind, the examples in Britain are innumerable, and, in fact, the publication of an A. has now become a favorite medium of advertising and puffery.

The heavy stamp-duty of fifteenpence per copy, to which almanacs were long liable in the United Kingdom, was abolished in 1834, since which time the character, number, and circulation of this class of publications have strikingly advanced. There is now a very large sale of almanacs in Great Britain for popular use, at not more than one penny each.

Bradford's press, Philadelphia, is believed to have issued the first common A. in the United States, 1687. Franklin's *Poor Richard's A.*, begun in 1732, and kept up by him for about 25 years, had a wide reputation for its wise and witty sayings. The *American A.*, and *Repository of Useful Knowledge*, issued in Boston, 1828-61, was continued two years, 1863-64, as *The National A.* The first volume of the *American Nautical A.* appeared in 1853. A valuable work was begun in 1878 by A. R. Spofford, librarian of congress, with the title *American A. and Treasury of Facts, Statistical, Financial, and Political*. The *Whig* began the series of political almanacs. Several leading newspapers, most religious denominations, and many trades and professions issue similar publications, among which the almanacs of patent-medicine dealers occupy a conspicuous place.

ALMANAC is also the term applied by antiquaries to calendars found carved, usually on staves, but also on tablets of wood, scabbards of swords, handles of hatchets, etc. The inscribed characters are sometimes the Runic—hence the name of *runstaffs*, *Scipiones Runici*—and sometimes the Gothic. The saints' days are denoted by symbols, as a pair of shoes for St. Crispin's Day. These primitive almanacs were in use among the Scandinavian nations, and the examples of them found in Britain are thought to have been introduced by the Norsemen.

ALMANDINE, n. *âl'măn-dîn'* [*Alabanda*, a city of Caria]: a lapidary's term for the violet or violet-red varieties of spinel, ruby, etc.; the precious or oriental garnet.

ALMANSA, *âl-măn'sá'*: town of Murcia, Spain, prov. of Albacete; 43 m. e. by s. from Albacete; on the Madrid and Alicante railway. It is on a wide plain, and is passably well built, and rather flourishing. The *vega*, or plain around the town is irrigated by water from a large reservoir called the *Pantano of Albufera*, and is very fertile. Many of its ague-breeding swamps have been drained and brought under cultivation. A. has manufactures of linen, hempen, and cotton fabrics, the materials of which are supplied from the neighborhood; also of brandy, leather, and soap. Pop. 8,736.

Near A. the French, under the Duke of Berwick, natural son of James II. of England, gained a victory, 1707, Apr. 25, over an army of Spanish and English troops, com-

ALMANSOR—ALMEIDA.

manded by Henry de Ruvigny, Earl of Galway. The French were more than twice the number of their opponents. Ruvigny fought under orders from home, contrary to his own judgment, and was deserted by the Spaniards almost as soon as the battle began. The battle of A. was, in its results, one of the most important in the War of the Spanish Succession. See SUCCESSION WARS.

ALMANSOR, *âl-mân-sôr'*, or, with his full name, Abu-Jafer - Abdallah - ben - Mohammed - el - Mansor [*al-mansor* 'helped by God']: the second caliph of the house of the Abbasides (q.v.): reigned 754-775. Warfare, treachery, and murder were his steps to the throne, and his whole rule was as cruel as its beginning. He especially persecuted the Christians in Syria and Egypt. In war against external foes, he had but little success. He removed the seat of the caliphate from Kufa to Bagdad, which he built at immense cost, raising the money by oppressive taxation. He introduced the pernicious custom of making his freed slaves, mostly foreigners, rulers of provinces. The best feature in his character was his patronage of learning. He caused the *Elements* of Euclid to be translated from the Syriac, and the famous fables of Bidpai (q.v.) from the Persian language. A. died during a pilgrimage to Mecca, in the sixty-third year of his age.

ALMAS, *âl-mâsh'*: town of the Austrian empire, in Hungary, 16 m. w. from Maria Theresiopol. The inhabitants are almost all Roman Catholics. Pop. (1880) 8,000.—Almas is the name of many small towns and villages in Hungary.

ALMAZORA, *âl-mâ-tho'rá*: town of Valencia, Spain, prov. of Castellon, 4 m. s. by e. from Castellon de la Plana, in a plain on the left bank of the Mijares, 3 m. from its mouth. It has some wide and well-paved streets and squares. Linen and woollen fabrics and paper are manufactured. The surrounding country is fertile, producing wheat, barley, maize, oil, oranges, etc. Pop. 5,850.

ALMEIDA, *âl-mã'ê-dá*: one of the strongest fortified places in Portugal; on the river Coa, on the Spanish frontier, prov. of Beira. In 1762, it was captured by the Spaniards, who soon afterwards surrendered it. Here, in 1810, when the French, under Marshal Ney, attempted to cross the Coa into Portugal, the English colonel, Cox, defended the town against Marshal Massena; but the explosion of a powder-magazine compelled him to capitulate. In their retreat from Portugal, 1811, the French under Gen. Brenier, destroyed a great portion of the fortifications of A.; which, however, were speedily repaired by the English. Pop. of A. 1,680.

ALMEIDA, DON FRANCESCO D': a famous Portuguese warrior, in the latter part of the 15th and the beginning of the 16th c.. seventh son of the Count of Abrantes. At an early period he distinguished himself in the wars with the Moors, but especially at the conquest of Granada, 1492. In 1505, his sovereign, Emanuel I., in consideration of his great abilities, appointed him viceroy of the Portuguese possessions in the East Indies. March 25, he set sail

ALMERIA.

from Lisbon with a fleet of 36 vessels, containing 1,500 men, many of whom were noblemen, and all of good family. July 22, he reached Quiloa, on the Mozambique coast, where he was soon involved in a quarrel with the king of that city, the result of which was that A. deprived him of his crown, built a fortress to overawe the inhabitants, and, proceeding to Zanzibar, destroyed the town of Mombaza. He then sailed for the Indies, asserting everywhere the superiority of the Portuguese flag. At Cananor, Cochin, Coulan, Ceylon, and Sumatra, he either built fortresses, to protect the factories and commercial interests of his nation, or established new factories. With the king of Malacca, a commercial treaty was formed about the same time. His son, Lorenzo, carried on several expeditions as his father's lieutenant, visited Ceylon, and discovered the Maldiv Islands and Madagascar. The chief design of A. was to make the Portuguese sole masters of the Indian seas, and by blockading the Persian and Arabian gulfs, to exclude the Egyptians and Venetians from commerce with the East. To frustrate his endeavors, the Egyptian sultan fitted out, by the help of the Venetians, a large fleet, which, under the command of the Persian, Mir-Hakim (or Hossein, according to others), was sent to the assistance of the king of Calicut. In the port of Chaul, young Lorenzo was attacked in very disadvantageous circumstances by Mir-Hakim. He fought with astonishing bravery; his ships had nearly made their escape out to the open sea, when his own ship was separated from the others, and struck upon a rock; one chance shot carried off one of his legs, and another, tearing away a part of his side, killed him. His father speedily took measures to revenge the death of his son upon the hated Mussulmans, when Alfonso d'Albuquerque appeared on the scene (1507), having been sent out by the Portuguese government to supersede A., whom it had begun to distrust, on account of his brilliant successes. The latter refused to recognize Albuquerque as viceroy, and for some months kept him prisoner at Cochin. He now sailed along the coasts, burning and plundering various seaports, amongst others Goa, and at length utterly destroyed the Egyptian fleet at Diu. From this fierce and avenging expedition, he returned to Cochin, resigned his office into the hands of his successor, and set out on his homeward voyage, 1508, Nov. 13, but was slain in an obscure affray with the savages at Cape Saldanha, in the s. of Africa, where his men had landed. He was a man of stern, vigorous, and yet impulsive character, capable of severe retaliation of injuries, but not destitute of clemency and generosity.

ALMERIA, *âl-mâ-rê'â* [Arab. *Al-Meryah*, 'the conspicuous']; anciently Murgis, or *Portus Magnus*: chief town in the Spanish prov. of the same name, at the mouth of the river Almeria. It has a well-defended harbor, a cathedral, besides 26 churches and monasteries, and a grammar-school. In the time of the Moors, it was, next to Granada, the richest and most important town in the kingdom, and flourished alike in arts, industry, and commerce, being the 'great port'

ALMIGHTY—ALMOKANNA.

of traffic with Italy and the East. At one time it was as terrible a nest of pirates as Algiers itself, under the Moorish chief Ibn Mayman, when even Granada, according to the proverb, was merely its 'farm.' Now it has only a few unimportant manufactures, though it still keeps up considerable trade in cochineal, red silk, lead, grapes, and especially wine. The cotton-tree has been planted in the environs of A. by English merchants. Pop. (1877) 40,323.

ALMIGHTY, a. *awl-mīt'ī* [*all* and *mighty*: AS. *eal-mihtig*]: possessing all power; omnipotent: N. the omnipotent God. **ALMIGHTILY**, ad. *-ī-lī*. **ALMIGHT'INESS**, n.

ALMODOVAR DEL CAMPO, *āl-mō-dō'vâr dēl kām'pō*: town of New Castile, Spain, province of Ciudad Real, 22 m. s.w. from Ciudad Real. It stands on the summit of a ridge, near the Vega, a branch of the Guadiana. The streets are passably clean, but ill paved. There are ruins of an ancient castle. The inhabitants are chiefly employed in agriculture, and the only manufactures are domestic. Pop. 10,360.

ALMOHADES, *āl'mo-hādz*: name of a dynasty that ruled in Africa and Spain during the 12th and 13th c. The word is Arabic, and signifies Unitarians. It was taken as a term of distinction: for the A. considered themselves the only Mohammedans who worshipped God properly. The founder of this sect, which at first was religious rather than political, was called Mohammed Ibn-Toumert, a native of the Atlas region. He was a man of a bold and subtle intellect, and extremely ambitious. He had travelled much, and acquired manifold knowledge and experience. His first measures were extremely prudent. He commenced preaching with great zeal the reformation of all abuses, affecting himself an austere and unselfish life. He went about covered with rags, prohibiting wine, music, and all pleasures. At first, his denunciations were generally held in contempt; but at length his partisans became so numerous that Ali, king of Morocco, was compelled to take measures against him. It was, however, too late. The Arabs and Berbers flocked to his standard; and at the end of a few years he was master of the provinces of Fez, Morocco, Tlemzen, Oran, and Tunis. Mohammed imposed on his disciples new ceremonies, and composed for their benefit a special treatise, entitled *On the Unity of God*. The A. extended their conquests into Spain, subjugating Andalusia, Granada, Valencia, and a part of Aragon, and Portugal as far as the Ebro and Tagus. Mohammed was succeeded in his authority by Abdelmoumen, who had formerly been his lieutenant. Under him and his descendants, Jussuf and Jacob, the dynasty of the A. continued to flourish in great splendor. But in 1212 they were completely defeated by the Spaniards in the famous battle of Tolosa, the result of which was a general revolt of the Christian provinces under their sway. The power of the A. was destroyed in Spain in 1257, and in Africa in 1269.

ALMOKANNA, or **MOKENNA**: see **MOHAMMEDAN SECTS**.

ALMOND.

ALMOND, n. *â'mûnd* [F. *amande*; Sp. *almendra*, an almond—from Gr. *amugdalon*: L. *amygdala*]: a genus of the natural order *Rosaceæ* (q.v.), sub-order *Amygdaleæ* or *Drupaceæ*, consisting of trees or shrubs, distinguished by the coarsely-furrowed and wrinkled shell (*endocarp* or *putamen*) of the drupe, and by the young leaves being conduplicate, or having their sides folded together. According to the greater number of botanists, it includes the **PEACH** (q.v.), constituted by some into a distinct genus, *Persica*, in which the drupe has a fleshy covering (*sarcocarp*), whereas, in the species to which the name *A.* is commonly given, this



Almond (*Amygdalus communis*).

part is a dry fibrous husk, which shrivels as the fruit ripens, and finally opens of its own accord. The common *A.* tree (*Amygdalus communis*) is very similar to the peach-tree, and is distinguished from it principally, besides the difference of the fruit, by the fine glandulous serratures of the leaves, the stalk of which equals, or even exceeds, in length the breadth of the blade. It is a tree about 20-30 ft. high, a native of the East, and of Africa, but has now become completely wild in the whole south of Europe. Even in the more northern parts of Germany and of Britain it is planted for the sake of its beautiful flowers, which are produced in great abundance, and resemble those of the peach in form and often in color, although generally paler and sometimes white. The blossoms appear before the leaves, and are very ornamental in shrubberies in March and April; and even

ALMOND.

when frost destroys the germ of the fruit, the brilliancy of the flower is not impaired. The wood of the A.-tree is hard, and of a reddish color, and is used by cabinet-makers, etc. But it is chiefly valued on account of the kernel of its fruit,



Almond.

well known by the name of ALMONDS, and forming an important article of commerce, for which it is extensively cultivated in the s. of Europe and other countries of similar climate. It is mentioned in the Old Testament, and appears to have been cultivated from a very early period. It was introduced into Britain as a fruit-tree before the middle of the 16th c.; but it is only in the most favored situations in the south of England that it ever produces good fruit. Almonds are

either sweet or bitter. The bitter appear to be the original kind, and the sweet to be an accidental variety, perpetuated and improved by cultivation. SWEET ALMONDS contain a large quantity of a very bland, fixed oil, emulsion, gum, and mucilage sugar, are of a very agreeable taste, and very nutritious, and are used in the dessert, in confectionery, and medicinally in an emulsion, which forms a pleasant, cooling, diluent drink. BITTER ALMONDS contain the same substances, and, in addition, a substance called *amygdalin*, from which is obtained a peculiar volatile oil. (For the oils derived from almonds, see the following articles.)—The muddy water of the Nile is clarified by rubbing bitter almonds on the sides of the water-vessels, in the same way in which the nuts of the *Strychnos potatorum* (see CLEARING NUT) are used in India. The principal varieties of A. in cultivation are—the common *sweet* A., with thick, hard shell; the *brittle-shelled*, with a very thin, almost leathery brittle shell, and sweet kernels; the *bitter* A., with thick, hard shell (sometimes also with a brittle shell), and bitter kernels; the *large-fruited*, with large flowers of a whitish rose-color, and very large, sweet fruit; the *small-fruited*, with very small, sweet fruit; and the *peach* A., with a slightly succulent blackish *sarcocarp* (see above), yellow shell, and sweet kernels. The *sarcocarp* is, in the different varieties, more or less dry, or somewhat fleshy and juicy, so that some authors have disputed even the specific distinction between the A. and the peach. In commerce, the long almonds of Malaga, known as Jordan almonds, and the broad almonds of Valencia, are most valued. Large quantities of almonds are annually imported into Britain and America from France, Spain, Italy, and the Levant. Bitter almonds are brought chiefly from Mogadore.—The DWARF A. (*A. nana*) is very similar to the common A., except that it is a low shrub, seldom more than 2 or 3 ft. in

ALMONDS.

height. Its fruit is also similar, but much smaller. It is common in the plains of the s. of Russia, and is frequently planted as an ornamental shrub in Britain, flowering freely in March and April, but not producing fruit. It is very beautiful when covered with its pink flowers in spring, and deserves to be more frequently planted than it is. A sheltered but sunny situation is favorable to it.—Other species, little known, but very similar to these, are found in the East, and one on arid hills in Mexico.

ALMONDS, n. p. 1., two glands situated on each side of the mouth near the base of the tongue; the tonsils.

ALMONDS, FIXED OIL OF: a fixed greasy oil exuding from almonds under pressure. Either bitter or sweet almonds may be employed; but the former are generally used, as they are cheaper than the sweet almonds, and the expressed cake is valuable in the preparation of the *essential oil*. One cwt. of the almonds generally yields 48 to 52 lbs. of the fixed oil. When first obtained it possesses a turbid or milky appearance; but when allowed to stand at rest the impurities settle, and a clear, light, yellow oil remains above. It has the specific gravity of 918, and solidifies when reduced to -13° F. It has no odor, and to the taste is truly oleaginous and bland. The fixed oil of A. is used in medicine, and possesses a mild laxative property when administered in large doses. It is often given to newly-born infants, mixed with syrup of violets or syrup of roses. It is beneficial, also, in allaying troublesome coughs, when administered with confection of roses and syrup of poppies.

ALMONDS, VOLATILE OIL, or ESSENTIAL OIL OF: product from the cake which is left after the expression of the fixed oil from bitter A. The cake contains, among other matters, a portion of two substances, called, respectively, amygdalin, and emulsin or synaptase. When the cake is bruised and made into a paste with water, the synaptase acts as a ferment upon the amygdalin, and 1 atom of the latter resolves itself into 2 atoms of volatile oil of bitter A., 1 atom hydrocyanic (prussic) acid, 1 atom of grape-sugar, 2 atoms formic acid, and 7 atoms of water. This paste is placed in a retort and allowed to stand for 24 hours, when heat is cautiously applied, and distillation carried on. The volatile oil rises in vapor, and passes over into the receiver, accompanied by much water, and contaminated with a considerable amount of prussic acid. The oil is not originally present in the bitter A.; in fact, the latter do not contain a trace of the oil ready formed, so that the oil is purely the product of the fermentation of amygdalin, 100 parts of which yield 47 of crude oil. Commercial oil of bitter A. has a golden yellow color, but may be purified so as to be almost colorless. The crude oil is very poisonous, owing to the prussic acid dissolved therein, and many fatal cases have occurred from the wilful, accidental, and careless use of the oil. It is unfortunate that the manufacturers of the volatile oil should not subject the crude oil to the action of lime and an iron salt, and then re-distil,

ALMONER—ALMORA.

when the prussic acid would be left fixed by the lime and iron, and the pure volatile oil be alone obtained in the receiver. As so procured, the pure oil is not a dangerous poison. The oil has an agreeable odor, an acrid, bitter taste, and burns with a smoky white flame. It is heavier than water, being of the density of 1083; is soluble in water to the extent of 1 part in 30 parts of water, and is very soluble in alcohol and ether. Heated to 356° F., it boils, and distills over unaltered; and, exposed to the air, it is gradually oxidized into benzoic acid. The oil is called by the chemist the hydride of benzoyle. In medicine the volatile oil is used in place of prussic acid, but is very variable in strength, being sometimes four times the strength of medicinal prussic acid. The dose is a quarter of a drop to a drop and a half in an emulsion. The cook and confectioner employ the oil for flavoring custards, etc., and the perfumer uses it for scenting toilet-soap, etc.

ALMONER, n. *āl'mōn-ēr* [mid. L. *almonāriūs*, an almoner: Ger. *almosen*, alms: F. *aumônier*—from OF. *almosnier*, the officer for dispensing alms—from Gr. *elēmōs'unē*, pity, alms]: a person appointed by a king or queen, or a monastery, to dispense their alms or charity to the poor. **ALMONRY**, n. *āl'mōn-rī*, the residence of the almoner; the house where alms are given. An A. originally was that member of a religious order who had the distribution of the money and other things set apart for alms, which, by canonical law, was to amount to at least a tenth of the revenues of the establishment. Afterwards those ecclesiastics also received this name who were appointed by princes to the same office in their households. The Grand A. of France was one of the principal officers of the court and of the kingdom, usually a cardinal, and, in right of his office, commander of all the orders, and also chief director of the great hospital for the blind. Queens, princes, and princesses had also their almoners, and bishops were usually appointed to this office. In England the office of *Hereditary Grand A.* is now a sinecure, his only duty being to distribute the coronation medals among the assembled spectators. The *Lord High A.*, usually a bishop, distributes twice a year the queen's bounty, which consists in giving a silver penny each to as many poor persons as the queen is years of age.

ALMORA, *āl-mō'rā*: principal town of the British dist. of Kumaon (q. v.), India; 87 m. n. from Bareilly, on the crest of a mountain ridge, 5,387 ft. above the sea, on the head waters of the Kosila, a branch of the Ramgunga. It consists chiefly of one street, three-quarters of a mile long. The houses have a ground story of stone; the upper stories are of wood, covered with a sloping roof of heavy gray slate, on which small stacks of hay are sometimes erected. The ground story is generally whitewashed and tricked out with grotesque paintings. Detached houses, both of Europeans and Brahmans, are scattered along the face of the mountain below the town. A. is a British military station, the lines of the regular troops and Fort Moira being close to

ALMORAVIDES—ALNWICK.

the town. Since it came under British sway it has been rapidly increasing in prosperity. Pop. 8,000.

ALMORAVIDES, *äl-mō'rā-vidz* [*The Moravides'*], or **MORABETHUN**: an Arab dynasty that ruled in Africa and Spain in the 11th and 12th centuries. The name A., commonly given to this dynasty by Western writers, is a corruption of the Arabic word *Al-morabeth*, 'the champion of religion.' This sect took its rise about 1050 among the Arab and Berber tribes which dwelt on the slopes of the Atlas range facing the Atlantic, and was founded by a Moslem teacher called Abdalla-ben-Yasim, who instructed the ignorant tribes in the Mohammedan faith. The new proselytes soon exhibited the fruits of this teaching by descending from their hills, under the leadership of a chief named Abu-bekr, and conquering the kingdom of Fez. The adjoining kingdom of Morocco shared the same fate; and the victorious enthusiasts, under the famous Yussuf-ben-Taxfin, the cousin of Abu-bekr, next crossed the Strait of Gibraltar, and subdued Spain to the Tagus on one side, and to the Ebro on the other. But this extensive dominion was of too rapid growth for stability; and during the reign of Ali, the son of Yussuf, arose the sect of the Almohades (q.v.), which after a time expelled the A. from Africa, and in 1144 subdued their power in Spain. The Almoravide princes introduced the *Maravedi* (q.v.) into Spain, and in that and the word *Marabuts* (q.v.) their name is still preserved.

ALMOST, ad. *awl'mōst* [AS. *ealmaest*, nearly all: *all* and *most*]: nearly; for the greatest part.

ALMS, n. *ámz* [AS. *almesse*, alms (see **ALMONER**)]: anything given to the poor in charity to relieve their wants. **ALMS'-HOUSES**, houses for the reception and relief of the poor. **ALMS'-DEED**, an act of charity.

ALMUG, n. *äl'mūg* [Heb. *almug*]: a tree mentioned in the Old Testament, formerly supposed to be a species of Acacia, or a coniferous tree like the cypress; now thought to be a kind of sandal-wood (q.v.) the *Santalum Album*. See **ALGUM**.

ALMUÑECAR, *äl-mōn-yā-kär'* [Arab. *Al Munneceb*, the gorge]: seaport of Andalusia, Spain, prov. of Granada, 31 m. s. of Granada. The port is somewhat exposed. The town is generally well built. It was a place of importance in Moorish times, when the coast of Granada was highly cultivated and extremely productive, particularly in sugar and cotton. Efforts have recently again been made to extend the culture of both. The inhabitants of A. are chiefly engaged in agriculture and sugar-refining. There is considerable trade in cotton, sugar, and fruit. Pop. 8,000.

ALNUS: see **ALDER**.

ALNWICK, *än'ník* (town upon the Alne): county town of Northumberland, Eng.; lat. 55° 25' n., long. 1° 42' w.: about 84 m. from Newcastle. The streets are broad, well paved, and well lighted, the houses modern, built of stone, and in some instances handsome. A large market-place,

ALOE.

occupies the centre of the town. The town-hall is a spacious building crowned with a tower. A. was at an early period a fortified town, and some fragments of the ancient walls even yet remain. An ancient gate, built by Hotspur, still forms one of the entrances to the city. A. Castle, the residence of the dukes of Northumberland, stands at the n. entrance of the town. It was repaired some years ago, and is considered one of the most magnificent baronial structures in England. During the middle ages it was a bulwark against the invasions of the Scots, who thrice besieged it. A. is the election town for the n. division of the county. It has various charity schools, a mechanics' institute, a theatre, a town-hall, and a corn exchange. Pop. (1881) 6,691.

ALOE, n. *āl'ō* [Gr. and L. *alōē*, a bitter herb]: name of a bitter plant used in medicine; applied to various species of the genus *Alōē*, Ord. *Liliacēæ*. ALOES, *āl'ōz*, the inspissated juice of the aloe. ALOETIC, a. *āl'ō-ēt'ik*, or AL'OET'ICAL, a. *-i-kāl*, of or containing aloes.

ALOE (*Aloē*): genus of plants, natural order *Liliacēæ* (q.v.) sub-order *Aloinēæ*; distinguished by a regular cylindrical perianth in six pieces, expanded at the mouth, and nectariferous at the base, the stamens hypogynous, or springing from beneath the germen, the ovules indefinite in number, the fruit a membranous three-celled capsule. The species are numerous, natives of warm countries, especially of the southern parts of Africa. About 50 m. from Cape Town is a mountainous tract completely covered with aloes, and the hills on the w. side of Socotra exhibit them in similar profusion. The species all have stems, but vary in height from a few inches to thirty feet. They have permanent succulent leaves. The negroes of the w. coast of Africa make cords and nets of the fibres of their leaves, and stockings are woven from the fibres of a species found in Jamaica. But aloes are valuable chiefly for their medicinal properties. The well-known drug called ALOES (q.v.) is the inspissated juice of the leaves of several almost tree-like species, and particularly of *A. Socotrina*, a native of the island of Socotra; *A. purpurascens*; *A. spicata*, and *A. fruticosa*, which principally yield the Cape aloes; *A. Indica*; *A. rubescens*; *A. Arabica*; *A. linguiformis*; *A. Commelini*, and *A. vulgaris*, which is found in the East and West Indies, in Italy, and in some of the islands of the Mediterranean, being the only species which can be reckoned European, although it also is probably an introduced plant. The extract prepared from its leaves is known as Hepatic aloes, or as Barbadoes aloes. The bitter principle of aloes has been called Aloesin. It forms with oxygen several compounds, which possess the properties of acids.—The juice of aloes was anciently used in embalming, to preserve dead bodies from putrefaction. In the East Indies it is employed as a varnish to prevent the attacks of insects, and has even been applied to bottoms of ships to protect them from marine worms. A beautiful violet color is obtained from the leaves of the Socotrine A., which does not require any mordant to fix it. It also affords a fine transparent

ALOES.

color for miniature painting.—Mohammedan pilgrims suspend an A. over their doors on their return from Mecca, to signify that they have performed the pilgrimage.

The AMERICAN A. is a totally different plant. See AGAVE.

ALOES: a drug of great antiquity, for Dioscorides (A.D. 50) mentions *Aloë* as a substance obtained from a plant, with cathartic properties.

The great demand for A. has led to importation from many sources, including Bombay, Arabia, Socotra, Madagascar, the Cape of Good Hope, the Levant, and the West Indies. The drug is the inspissated juice of various species of Aloe (q.v.). All these are characterized more or less by producing large, thick, fleshy leaves, stiff and brittle, pointed, and generally terminating in a strong spine, filled with a mucilaginous pulp internally, and containing in the proper vessels of their exterior portion an intensely bitter juice, which yields the medicinal substance A. It is obtained, sometimes in the form of tears, by incision, spontaneous exudation, and inspissation upon the plant; sometimes by spontaneous evaporation of the juice which drops or exudes by pressure from the leaves when cut away near the base; sometimes by evaporating the same juice with the aid of heat; and lastly, by evaporating together the juice and a decoction of the leaves.



Aloë fruticosa:
b, the flower.

Owing to the great difficulty of determining the true botanical source of any given sample, the following names are made use of in commerce to denote the various kinds of A. found in the market—namely, Socotrine, Clear, Cape, East Indian, Barbadoes, and Caballine Aloes. The most important are:

1. Socotrine A. (*Aloë Socotrina*), so called from its supposed source, the island of Socotra, near the mouth of the Arabian Gulf. This is the most esteemed of all the varieties used in medical practice. Many hold that this is only a fine variety of East Indian A., but the characters given in the *Edinburgh Pharmacopœia*—a garnet-red translucency in thin pieces, and almost complete solubility in spirit of the strength of sherry—define a particular species, the true Socotrine A. of pharmacologists.

2. East Indian A. (*Aloë Indica*), called also Hepatic A., from its liver-brown color, is imported into Bombay from Arabia and Africa, and is known in India by the name of Bombay A. A considerable portion is probably obtained from the same sources as the Socotrine A., which it resembles in color; and according to Dr. Pereira, 'the two

ALOES WOOD.

are sometimes brought over intermixed, the Socotrine occasionally forming a vein in a cask of Hepatic Aloes.'

3. Barbadoes A. (*Aloë Barbadosensis*) is prepared in the West Indies from *A. Socotrina*, and from a variety of *A. vulgaris*. Browne's *Natural History of Jamaica* states that the largest and most succulent leaves are placed upright in tubs, that the juice may dribble out. This evaporated forms what is sold as Socotrine A.; but the common A. is obtained by expressing the juice out of the leaves, boiling it with water, evaporating and pouring it into gourds; whence this kind is often called gourd Aloes. It is much used for veterinary medicine, and thus brings a high price.

Caballine A. (*Aloë caballina*) is a very coarse kind, and is so called because it is considered fit only for horses. It contains many impurities, such as wood, sand, and charcoal, and evidently constitutes the lowest stratum in the vessels in which the better sorts are allowed to cool. It is now in a great measure superseded in veterinary practice by Barbadoes Aloes.

All kinds of A. are remarkable for their disagreeable taste. The odor is peculiar, and is more perceptible when the drug is breathed upon. A. is in a great measure soluble in water, more so in hot than cold water. A. was formerly considered a gum-resin; but the portion which was thought to be of the nature of gum is now regarded as a variety of *extractive*, and to it the name of Aloesin has been given.

Action.—When employed in small doses, A. exerts a tonic, and in larger doses, a cathartic action. It is considered by some authorities to stimulate the liver, and also to supply the place of deficient bile in torpidity of the intestinal canal, and more especially towards its lower part. As taken singly, and in combination with other cathartics, A. is perhaps the most important and the most extensively used of vegetable remedies of its class; and there is no end to the variety of cases in which it may be employed with advantage.

ALOES WOOD (called also Agila Wood, Eagle Wood, or Agallochum): the inner part of the trunk of *Aquilaria ovata* and *A. Agallochum*, trees of the natural order *Aquilariaceæ* (q.v.), natives of the tropical parts of Asia, and supposed to be the aloes or lign aloes of the Bible. They are large spreading trees with simple alternate leaves. Aloes-wood contains a dark-colored, fragrant, resinous substance, and is much prized in the East as a medicine, and for the pleasant odor which it diffuses in burning. It has been prescribed in Europe in cases of gout and rheumatism. The resinous substance is found only in the inner part of the trunk and branches; the younger wood is white, and almost scentless. A similar substance, still more esteemed, is obtained in the s.e. of Asia and the adjacent islands, from the central part of the trunk of *Aloexylon Agallochum*, an upright-growing tree with simple alternate leaves, and terminal panicles of small flowers, of the natural order *Leguminosæ*, sub-order *Casalpinieæ*. This tree abounds particularly on the highest mountains of Cochin-China and the Moluccas; a character of sacredness is attached to it, and it is cut with religious ceremonies. The A. W. which it

ALOFT—ALOSE.

yields is not only much prized in the east as a perfume, but many medicinal virtues are ascribed to it. The ancients ascribed to it similar virtues, and so valued it for these and its fragrance, that Herodotus says it sold at one period for more than its weight in gold. It was regarded almost as a universal medicine. Its very fragrance was supposed to have a beneficial influence, and it was therefore worn about the person. As it admits of a high polish, and exhibits a beautiful graining, precious gems were set in it; and it was cut into fantastic forms and worn in head-dresses, etc. There seems to be allusion to a similar use of it in Psalm xlv. 8, 'All thy garments smell of myrrh and *aloes* and cassia.' Or perhaps this merely refers to its being employed to perfume clothing. It was also from a very early period much used to perfume the apartments of the great. The fragrance continues undiminished for years. *Lign Aloes* is a corruption of *Lignum Aloes* (Aloes Wood).

ALOFT, ad. *á-löft'* [Icel. *á lopt*, on high; Icel. *lopt*; AS. *lyft*; Ger. *luft*, the air (see **LIFT**)]: on high; in the air; among *seamen*, up among the rigging. **ALOW**, ad. *á-lö'*, in a low place; not aloft.

ALONE, ad. *á-lön'* [*all* and *one*: OE. *al-one*]: by itself; quite by one's self; singly: **ADJ.** single; without company. **TO LET ALONE**, to suffer to rest or remain.

ALONG, prep. *á-löng'*, or **ALONGST**, prep. *á-löngst'* [AS. *andlang*; Ger. *entlang*; It. *lungo*]: by the length; lengthwise; forward; in OE., owing to: **AD.** forward; (used also for *together*). **ALONGSIDE**, by the side of, *as a ship*. **ALONG OF**, in OE., owing to.

ALONG-SHORE: near to, and parallel with, the shore. 'Along-shore-men,' or 'long-shoremen,' is a peculiar designation given to some of the humbler and rougher workmen employed about docks and shipping.

ALOOF, ad. *á-löf'* [AS. *a*, on; *lyft*, the air; *loof*, the windward side of a ship; *aloof*, on loof—viz., out of danger; Dut. *loef*, an oar-pin]: keeping away from; at a distance from. To 'keep the loof,' or 'keep the luff,' is a command given to the man at the helm. **ALOOFNESS**, n. the state of keeping or being aloof.

ALOPECURUS: see **FOXTAIL**.

ALOPECY, n. *ál'ö'pě-sī*, or **ALOPE'CIA**, n. *-shī-ä* [Gr. *alopez*, a fox]: the fox-evil or scurf; any kind of baldness.

ALORA, *á-lö-rá*: town of Andalusia, Spain, prov. of Malaga, 18 m. n.w. of Malaga, on an elevated site near the right bank of the Guadalherce. Some of the streets are well built, and well paved; some are very steep and irregular. There are ruins of an ancient Gothic castle. The inhabitants are mostly employed in agriculture. Soap and sulphate of soda are manufactured. The neighborhood produces much oil and excellent wine. Pop. (1877) 10,014.

ALOSA: see **CLUPEIDÆ** and **SHAD**.

ALOSE, n. *á-löe'* [F. *alose*—from L. *alōsa*]: the shad; a species of herring.

ALOST—ALP.

ALOST, *á'lōst*, or **AALST**, *álst* [the name signifies 'to the east,' and was probably given to the town because it lay near the e. frontier of the province]: town in Belgium, old cap. of the prov. of East Flanders, is situated on a tributary of the Scheldt, called the Dender, here converted into a canal. It is a walled city with five gates, has considerable trade in hops, corn, etc., and large manufactures, besides numerous breweries, distilleries, bleach-fields, print-works, copper and iron-foundries, flax and cotton mills, etc. The finest building in A. is the church of St. Martin, unfinished, but one of the grandest edifices in Belgium, and containing a famous painting by Rubens—*St. Roch beseeching our Saviour to stay the Plague of A.*, and also the mausoleum of Thierry Martens, who was born here, and who introduced the art of printing into Belgium, 1475. A. has a town-hall (founded, 1200), a college, a hospital, chamber of commerce, academy of design, etc. Pop. (1884) 22,143.

ALoud, ad. *á-lowd'* [AS. *a*, on, and *loud*: Icel. *hljóð*; Dan. *lyd*; Ger. *laut*, with sound]: a high tone of voice; with much noise.

ALOW, ad.: see under **ALOFT**.

ALOYSIA, *á-loy'si-a*: genus of plants of the natural order *Verbenaceæ* (q v.), to which belongs a shrub, *A. citriodora*, cultivated in greenhouses and apartments for the grateful fragrance which its leaves emit when lightly bruised. It is frequently named *Verbena*. It was formerly known to botanists as *Verbena triphylla*, and has also been referred to the allied genus *Lippia*. The leaves are in whorls of three. It is a native of Chili. In the Channel Islands and the s. of Ireland, it becomes a luxuriant shrub in the open air, reaching a height of 10–25 ft., with osier-like shoots.

ALP: see under **ALPINE**.

ALP, or **ALB**, also called the Rauhe or Swabian Alp: a chain of mountains above 60 m. in length, and from 12 to 15 in breadth, between the Neckar and the Danube. It forms the water-shed between these two rivers and the basin of the Rhine, and lies almost entirely within the kingdom of Würtemberg. It is also in the vicinity of the Black Forest, but presents a totally different appearance, on account of its being clothed with forests of hard wood instead of pine. It forms a table-land intersected by a few narrow deep valleys. The average height of the system is rather more than 2,000 feet. On the n., it descends to the Neckar in ridges of rocky cliffs, and abrupt pointed headlands; but on the s., it gradually slopes away to the level of the valley of the Danube. The scenery is often very picturesque, for the sharp, precipitous crags are frequently crowned with the strongholds, generally ruins, of the famous old German families, such as the Hohenzollerns, Hohenstaufens, etc. The geological formation of the Alp is calcareous, and presents a regular stratification. Caverns of a very remarkable character abound among the rocks. The valleys at the base of the hills are fertile, and produce abundance of wine and fruit, but the high table-land has an extremely poor and barren soil.

ALPACA.

ALPACA, n. *ál-pák'ä*, or **PACO**, *pák'ö* [Sp. *alpaca*—from a Peruvian word]: (*Auchenia Paco*; see **AUCHENIA**): a ruminating animal of the mountainous districts of S. Amer., allied to the camel, but of much smaller size, and having long woolly hair; a variety of the llama; a fabric or cloth made from its hair. The A. is of the same genus with the Llama (q.v.), and so closely allied to it, that many naturalists regard it as a variety rather than a distinct species. It is remarkable for the length and fineness of the wool, which is of a silken texture, and of an uncommonly lustrous, almost metallic appearance. The A. is smaller than the llama; the legs and breast are destitute of callosities. In form, it somewhat resembles the sheep, but with a longer neck and more elegant head. It carries its long neck erect; its motions are free and active, its ordinary pace a rapid bounding canter. The eyes are very large and beautiful. The wool, if regularly shorn, is supposed to grow about 6 or 8 inches in a year; but if allowed to remain upon the animal for several years, attains a much greater length, sometimes even 30 inches, and frequently 20. Its color varies; it is often yellowish brown, sometimes gray, or approaching to white; sometimes almost black.

The A. is a native of the Andes, from the equator to Tierra del Fuego, but most frequent on the highest mount-



Alpaca.

ains of Peru and Chili, almost on the borders of perpetual snow; congregating in flocks of one or two hundred. In a wild state, it is very shy and vigilant. A sentinel on some elevated station gives notice of the approach of danger by snorting to alarm the flock. Alpacas seem instinctively to know when a storm is coming on, and seek the most sheltered situation within their reach. Flocks, the property of the Peruvian Indians, are allowed to graze throughout the whole year on the elevated pastures, and are driven to the huts only at shearing-time. When one is separated from the rest, it throws itself on the ground, and neither kindness nor severity will induce it to rise and advance alone. It is only when brought to the Indian huts very young, that they can be domesticated so as to live without the companion-

ALP-ARSLAN.

ship of the flock; but then they become very bold and familiar. Their habits are remarkably cleanly.

The Indians have from time immemorial made blankets and ponchos or cloaks of A. wool. It is not quite fifty years since it became an article of commerce, but its use for the manufacture of shawls, coat-linings, cloth for warm climates, umbrellas, etc., has gradually increased, and more than 2,000,000 lbs. are now annually imported into Britain. The credit of introducing and raising to its present magnitude the Alpaca wool-manufacture in Britain is due to Sir Titus Salt. The importation to America also is extensive.

Attempts have been made to introduce the A. into Europe; but not yet with very satisfactory results. The only considerable flock known to exist is in the Pyrenees. There seems no reason, however, to doubt that the mountains of Wales and Scotland are suitable for it. An attempt was made in 1821 to introduce the A. into the United States; a fund was raised, and, in 1857, a cargo of them was shipped to Baltimore, but the effort to acclimatize them did not succeed.

A. wool is straighter than that of the sheep, very strong in proportion to its thickness, and breaks little in combing. The fibre is small and very soft, pliable, and elastic.—The flesh of the animal is said to be very wholesome and pleasant food.

ALP-ARSLAN, *âlp-ar-slân'*: a Persian Sultan, the second of the Seljukide dynasty: 1028 (or 30)–72; b. Turkestan: ascended the throne of Khorassan 1053. after the death of his father Daoud, and in 1063 he also succeeded his uncle. His first act was to unite the whole of his dominions in one vast monarchy. He next embraced Islamism, and it was on this occasion that he took the surname of Alp-Arslan (the Lion-heart), his real name being Mohammed-Lhaz ed-Dyn Abou-Choudja. The caliph of Bagdad gave him the title of Adhad-eddin (Defender of the Faith), with this extreme honor—that prayer should be made in his name. He had an excellent vizier, Nisam-al-Mulk, one of those lettered ornaments of early Mohammedanism. This vizier was the founder of all the colleges and academies in the kingdom. While he directed the internal administration of affairs, A. made war successfully. He suppressed revolts, and extended the northern boundaries of his dominions. In 1067–68, he pursued the course of his conquests, carrying off the gates of the church of St. Basil at Cæsarea, which were enriched with gold and pearls, and overthrowing the Greeks under Nicephorus Botoniates. In 1069, he invaded Armenia and Georgia, at that time Christian kingdoms. The most remarkable incident in this expedition was the blockade of the convent of Mariam-Nishin, situated on an island in the middle of a lake, and considered impregnable. An earthquake overthrew the walls during the siege, when it immediately surrendered. He next proceeded against the Greeks, who, under their brave emperor, Romanus IV., had thrice driven back the Turks beyond the Euphrates. In August, 1071, a bloody battle was fought near the fortress of Malas-kerd, between the towns of Van and Erzeroum. A. gained the victory. The Greek emperor was taken prisoner, and

ALPES—ALPES MARITIMES.

only obtained his liberty by a ransom of £1,000,000, and an annual tribute of £160,000. Rather more than a year after this (1072, Dec. 15), A. perished at Berzém in Turkestan by the poniard of Jussuf Cothuol, whom he had insulted. He was buried at Mervé, in the tomb of his ancestors.

ALPES, *âlp*: name of two departments in France, the *Basses-Alpes* (or Lower Alps), and the *Hautes-Alpes* (or Upper Alps).

The dept. of the **BASSES-ALPES** occupies the n.e. of Provence. It is, for the most part, mountainous, consisting of spurs or offshoots from the Maritime Alps, which run in numerous chains towards the Rhone. In the n., the climate is cold, the soil poor, and the cultivation bad; in the s., the climate is much better—almonds, apricots, peaches, and various other choice fruits are grown, among which the plums of Bignolles form a well-known article of commerce. The wines of this region are reckoned excellent. On the sides of the Alps, oxen and sheep find admirable pasturage. The mines produce lead, green marble, etc. At Digne and Gréoulx are hot mineral springs. The trade carried on is insignificant. The department is watered by the Durance. Area, 2,680 sq. m.; pop. (1881) 131,918. The chief town is Digne; pop. 5,252.

The **HAUTES-ALPES**, lying n. of the *Basses-A.*, and forming part of the old prov. of Dauphiné, is traversed by the chief range of the Cottian Alps, which here rise, in Mount Pelvoux, 14,000 ft., and Mount Olan, 13,120 feet. The scenery, especially along the course of the impetuous Durance, is singularly picturesque. The *Hautes-A.* is the highest department in France; the fierce north wind and the perpetual snow on the lofty peaks make the climate severe and the winter long, so that the barren soil will yield little else than potatoes, a little rye, oats, and barley. Here and there, in the most southerly valleys, nut-trees, chestnuts, vines, and other choice fruits, thrive. Only horned cattle, asses, and mules are bred profitably. The most important roads through this department are: 1st, The road from Grenoble to Briançon; 2d, The road from Briançon to Susa, in Piedmont, over the Col-de-Genevre, which, 1859, was used to transport masses of French soldiery into Italy; 3d, The road from Gap to Marseilles. The inhabitants are employed in the manufacture of leather, linen, and woollens; and some are engaged in the mines of lead, copper, iron, and anthracite. Area, 2,150 sq. m.; pop. (1881) 121,787. Chief town, Gap; pop. 8,718.

ALPES MARITIMES, *âlp mâ-rî-tîm'*: a dept. of France, in the extreme s.e., on the shores of the Mediterranean and confines of Italy; formed in 1860, of the ancient county of Nice, then ceded to France, formerly belonging to the kingdom of Sardinia, and of the arrondissement of Grasse, detached from the department of Var. The chain of the A. M. forms the n. boundary of the department, and from it numerous spurs run seaward, among which are lovely and fertile valleys. The chief rivers of the department are the Loup, the Var, and the Paillon, at the mouth of which Nice

ALPHA.

is situated. The climate is mild and pleasant in the vicinity of the sea, and in the lower valleys, although the higher mountains reach altitudes where winter always reigns. The vine and olive are much cultivated in the more favored localities; oranges, lemons, and figs are produced in abundance and of excellent quality; considerable land is devoted to tobacco, and not a little to the cultivation of herbs and flowers for the preparation of essences and perfumes. Grasse is particularly famous for the manufacture of perfumery. In many parts of the department are noble forests. In the more elevated parts, much land is used for the pasture of sheep, and also of goats, of which these regions possess a highly-esteemed breed. The silk-worm is reared to a considerable extent, and the keeping of bees is a source of wealth, honey being largely produced and exported. The mineral riches are not great. There are some quarries of white marble, and some mineral springs. Among the chief branches of industry, besides those strictly rural, are brass-founding and the making of bijouterie. The tunny, anchovy, and sardine fisheries employ many people on the shores of the Mediterranean, and great quantities of anchovies and sardines are exported from the port of Cannes. The dept. is divided into three arrondissements—Nice, Puget-Théniers, and Grasse. The capital is Nice (q. v.), and the other principal towns are Antibes, Villefranche, Cannes, Grasse, and Menton or Mentone. Pop. (1881) 226,621.

ALPHA, n. *äl'fä* [Gr.]: the first letter of the Greek alphabet; the first or beginning. ALPHABET, n. *äl'fä-bët* [Gr. *alpha*, a; *bëta*, b; mid. L. *alphäbëtüm*]: the letters of any language arranged in a fixed order. ALPHABETIC, a. *äl'fä-bët'ik*, or AL'PHABET'ICAL, a. *-i-käl*, arranged in the order of the alphabet. AL'PHABET'ICALLY, ad. *-i*.

ALPHABET.

ALPHABET: the series of letters, arranged in a fixed order, with which a language is written. Picture-writing was doubtless the earliest method invented of conveying thought through the eye. The idea of an ox was readily expressed by a rude sketch of the animal, or, for shortness, by an outline of his head and horns. Or the picture was used symbolically; as the figure of an eye, to express the action of seeing, or the attribute of wisdom. In process of time, some of those pictures came to be used phonetically—i.e., to represent, not ideas, but sounds. But the sounds so represented would at first be whole words, or, at all events, syllables; and the important step was yet to be taken of analyzing syllables into their elementary sounds, and of agreeing upon some one unvarying picture or sign (a letter) to represent each. This constituted the invention of the A.

Taylor, in his great work on *The Alphabet* (2 vols., 1883), affirms and proves Rongé's theory that the Phœnician, the oldest true A. known, is derived from an old hieratic series of alphabetic symbols, compiled by the Egyptians out of their multitudinous hieroglyphs. See **HIEROGLYPHICS:** also **CHINESE LANGUAGE, CUNEIFORM, and WRITING.** This series, however, was not used by the Egyptians simply as an A.; such, simple, was the discovery or invention of the Phœnicians. From Phœnician and cognate Shemitic alphabets have originated, directly or indirectly, almost all the modes of writing now in use. Hence came Greek, Latin, Hebrew, Arabic, and the Indian alphabets; (Chinese, and apparently ancient Hittite, Lycian, and Cypriote syllabaries were distinct). Some hundreds of alphabets, ancient and modern, have been enumerated; but of those now in use, setting aside slight variations of form, the number does not exceed 50. Those here to be considered are more immediately connected with the history of the English A.

In modern alphabets, the *order* of the letters appears at first sight to be quite arbitrary; but there are traces of a natural system according to which the series grew, best seen in the Hebrew A., which was almost identical with the Phœnician. The Hebrew *characters* given below are the square Hebrew, borrowed from Aramæa (q.v.). The oldest Hebrew A. had characters identical with those of Phœnicia (q.v.).

The following table shows the Hebrew letters, with their names, and sounds or powers; also the names of the letters composing the early Greek A., as borrowed from the Phœnician:

HEBREW.			GREEK.
	Name.	Sound or Power.	
1	א Aleph,	a vowel or breathing.	Alpha.
	ב Beth,	B.	Beta.
	ג Gimel,	G (in gun).	Gamma.
	ד Daleth,	D.	Delta.
2	ה He,	a vowel or breathing.	E(psilon).
	ו Vau,	V or F.	F = V (digamma.)
	ז Zayn,	Z.]	Zeta.
	ח Kheth,	KH or CH.	Eta.
	ט Theth,	TH.	Theta.

ALPHABET.

HEBREW.

GREEK.

	Name.	Sound or Power.	
3	י Yod,	J.	Iota.
	[כ Kaph,	K, variety of.]	Kappa.
	ל Lamed.	L.	Lambda.
	מ Mem,	M.	Mu.
	נ Nun,	N.	Nu.
	[ס Samekh,	S. variety of.]	Sigma.
	ע Ayn,	a vowel.	O(mikron).
	פ Pe,	P.	Pi.
4	[צ Tsadi,	TS.]	
	ק Koph,	K or Q.	Koppa.
	[ר Resh,	R.]	Rho.
	[ש Sin,	S.]	San.
	ת Tau,	T.	Tau.

Leaving out of account the letters inclosed in brackets, which are not easily accounted for, and are possibly later interpolations, the whole fall into four groups, the law of which will appear in the following scheme:

Vowels.	Labials.	Palatals.	Dentals.	
a	b	g	d	Flats or medials.
e	v	ch	th	Aspirates.
o	p	k	t	Sharps.
i	l	m	n	Liquids.

Without entering at present into the nature of the relation between the letters in the several rows, horizontal and vertical, of the scheme (for which see LETTERS), it will be seen that group (1) in the Hebrew A. consists of a vowel followed by three mute letters, all having one character (flats or medials); that group (2) consists of a vowel followed by three mutes, also having one character (aspirates); and that group (4) consists in like manner of a vowel followed by three mutes, all of the same character (sharps). The order, moreover, according to the organ of utterance, in which the mutes follow in each group, is invariable: the labial (lip-sound) coming first; the palatal (palate-sound), second; and the dental (tooth-sound), last. This principle of arrangement is characterized by Dr. Latham as a *circulating order*. Group (3) likewise consists of a vowel and four consonants of one character (liquids); but in this case the order of the vocal organs is not observed—at least in the form in which the Hebrew A. is now known; in order to be symmetrical with the other groups, the sequence would require to be *m, l, n*.

ALPHABET.

The nucleus of the original A. thus seems to have consisted of sixteen letters, grouped in four tetrads or quaternions, on an organic principle of arrangement. This principle is obscured in English and other modern alphabets, by some of the letters having gradually come to represent quite other sounds than their original. There is sufficient evidence, for example, that in the earliest Latin alphabet, from which the English is derived, the third letter, C, had the power of G (in *gun*). There was a subsequent period in the development of that language when the distinction between the sharp and flat palatal sounds seems to have been lost, and when two syllables like *kam* and *gam* would have been pronounced both alike (*kam*). C thus acquired the power of K, and the letter K itself went almost out of use. But about the time of the First Punic War (B.C. 264-241), the distinction between the sharp and the flat sounds revived; and while the original C continued ever after to have the power of K (*C cero*, for instance, was pronounced *Kikero*), a new character (G) was formed from it, by a very slight alteration, to express the flat sound. Again, the modern H, which has in most cases become a mere evanescent breathing, can be traced back until it becomes a strong guttural, like CH in the Scotch word *loch*. The place of the third consonant in the cycle of aspirates is a complete blank in the alphabets derived from the Latin; because that language being originally destitute of the sound dropped the sign of it, from the first. The Latins were, in fact, completely destitute of the genuine aspirate sounds; for even the letter F had not the sound now given it. Therefore, when they had to represent the aspirate consonants of the Greek language, ϕ , χ , θ , they had recourse to the combinations *ph*, *ch*, *th*—a clumsy expedient still followed in modern alphabets derived from the Roman, and constituting one of their most serious defects. The cycle of the sharps is nearly perfect in the English alphabet, for Q is only a variety of K.

It is easy to conceive a language represented by sixteen characters of the nature above described. The most serious deficiency would seem to be the want of *r* and *s*. But the sound of *th* is very nearly allied to that of *s* (witness 'loves or loveth;,' also the pronunciation of a person who *lithpth*), and one character might be made to stand for both, as easily as an English *c* is made to represent two sounds so different as those exemplified in *cat* and *city*. Some nations, again, are said to make no distinction between *r* and *l*, so that one character might stand for both these sounds.

But whether or not the Phœnician A. had originally only sixteen letters, it is evident that when transplanted into Greece, it had twenty-one letters, if not twenty-two. In accommodating itself to the necessities of the Greek tongue, it gradually underwent a series of changes. Some of the letters were modified: *He* became *e*; *Cheth*, *ee*; *Sigma* became $\xi = x$, and the name *Sigma* was transferred to *San*. Other letters were altogether dropped, as *Digamma* (= *v*) and *Koppa*. On the other hand, for such simple sounds as had no repre-
























ALPHABET.

sentatives in the Phœnician, new characters were invented, and annexed to the end (υ , ϕ , χ , ψ , ω).

Another important change was in the *direction* of the writing. In the Phœnician and other Semitic languages, the writing proceeded from right to left. The Greeks, on borrowing the Phœnician A., also wrote for some time from right to left. The mode called *bustrophedon* (turning like an ox in plowing), of writing alternately from right to left and from left to right, was then introduced; and finally the direction from left to right prevailed throughout the west, to the exclusion of the other modes.

In the classical period of the Greek language, the A. had come to consist of twenty-four letters, as in columns 2, 3, 4 of the following table. Column 1 (copied from Ballhorn's *Alphabet*) gives some of the earlier forms of the Greek letters, found on coins and other inscriptions, of the period when writing still proceeded from right to left; column 2 is from the Alexandrian Codex (q. v.), as given in Key's *Alphabet*; and Nos. 3 and 4 are the modern printed forms of capitals and small letters. The small characters are merely cursive forms or variations of the capitals; and it would not be difficult to show how, in each case, the endeavor to trace the capital on soft material rapidly and without lifting the hand would give rise to the form now used as the small letter.

GREEK ALPHABET.

1	2	3	4	Name.	Power.
				Alpha	a
				Beta	b
				Gamma	g
				Delta	d
				Epsilon	e (short)
				Zeta	ds
				Eta	e (long)
				Theta	th
				Iota	i
				Kappa	k

ALPHABET.

1	2	3	4	Name.	Power.
Λ	λ	Δ	λ	Lambda	l
Μ	μ	Μ	μ	My	m
Ν	ν	Ν	ν	Ny	n
Ξ	ξ	Ξ	ξ	Xi	x
Ο	ο	Ο	ο	Omikron	o (short)
Π	π	Π	π	Pi	p
Ρ	ρ	Ρ	ρ	Rho	r
Σ	σ	Σ	σ	Sigma	s
Τ	τ	Τ	τ	Tau	t
Υ	υ	Υ	υ	Ypsilon	u
Φ	φ	Φ	φ	Phi	f ph
Χ	χ	Χ	χ	Chi	ch
Ψ	ψ	Ψ	ψ	Psi	ps
Ω	ω	Ω	ω	Omëga	o (long)

With regard to the *figures* or shapes of the letters, it is believed that they all arose out of pictures or hieroglyphic characters. The names of the Hebrew letters are the names also of material objects; and the letters themselves were at first, in all probability, rude outlines of the objects. Aleph, for example, means an 'ox,' and the letter was in its origin an outline of an ox's head. The history of Gimel, which means 'camel,' is probably similar. The Hebrew characters now known are believed to be comparatively modern, and much corrupted from their original forms, and the likenesses are more difficult to trace in them than in the Samaritan and the early Greek, or even in the Latin. Mem, again, is the Hebrew word for 'water,' and some of the earliest forms of the letter M are zigzag lines, similar to the sign of *Aquarius* (♒) in the zodiac, intended, no doubt, to represent the undulations of water. Ayn, the name of the Hebrew letter equivalent to O, also means an 'eye,' and the picture of an eye would naturally degenerate into a circle, first with a dot in the centre (which some ancient O's actually have), and then without a dot.

The A. came into Italy not directly from Phœnicia, but from Greece, and that at a time when the Greek A. had undergone some of the changes described above, although not all of them; υ, φ, χ had been added, but not ψ and ω. Moreover, there must have been distinct and independent importations into more than one part of Italy, and that,

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probably, from different parts of Greece, or, at all events, at different periods. The Etrurian A. is evidently an earlier importation than the more southerly Latin, as it departs less from the Phœnician. There are differences even in different parts of Etruria itself. The alphabets of Etruria n. of the Apennines (for numerous inscriptions recently discovered show that this remarkable race must have extended at one time as far north as the Alpine valleys of Provence, Tyrol, Graubündten, and Styria) differ slightly from the alphabets of the inscriptions in Etruria proper, which are demonstrably taken from the A. of the Greek colony of Cære.

The Latin A., which became that of Rome, and thus of the whole western world, was borrowed from a newer form of the Greek—namely, that imported by the Dorian Greeks of Cumæ and Sicily. The writing in the oldest Latin inscriptions is never from right to left, as mostly in Etrurian. On the other hand, the Kaph and the Koph (K and Q) of the Phœnician, which disappear in Etrurian, are retained in Latin. The Greek A. of Cumæ had not yet received the addition of ψ and ω ; but it still retained the representative of the Phœnician *Vau*, the Digamma, and also *Koppa*, and thus consisted of twenty-four letters. The Latin tongue, being destitute of aspirate sounds, dropped the three letters θ , ϕ , χ , so that the original Latin A. consisted of twenty-one letters, the forms of which, as seen on the oldest inscriptions, were as in the following table. See Corssen's *Aussprache, Vocalismus und Betonung der Lateinischen Sprache* (Leip. 1858.)

1. a	A, Λ , Λ , Λ .	12. m	M, W, W, III.
2. b	B, B.	13. n	N, N.
3. c	C, C, C.	14. o	O, O, O, o.
4. d	D.	15. p	P, P.
5. e	E, II.	16. q	Q.
6. f	F, F.	17. r	R, R.
7. z	Z.	18. s	S, S, S.
8. h	H.	19. t	T, T.
9. i	I.	20. v	V, V.
10. k	K, (C)	21. x	X.
11. l	L, L, L.		

Z was early dropped, and the new letter G (see above) substituted for it; and thus the Latin A. continued to the last to consist of twenty-one letters, until it was applied to the modern tongues of w. Europe. The distinction made between *u* and *v*, and between *i* and *j*, in printing Latin books, is a modern innovation; and no Latin word contains either *y* or *z*. The five additional letters that make up the twenty-six of the English A. arose from the addition of *s*, and the development of *i* into *j*, and of *u* into *w*, *v*, and *y*.

The Anglo Saxon A. had two useful letters, which have disappeared from modern English—namely, one for the

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sound of *th* in *thin*, and one (or rather two) for that of *th* in *thin*. These were derived, in all probability, from the Mæso-Gothic A., which (as well as the Russian and other Slavonic alphabets) was founded on the Greek rather than the Latin. The loss of these letters is owing to the influence of the Norman-French, the alphabet of which is exclusively Latin. The forms of the Anglo-Saxon letters are as under:

A	a	(A)	N	n
Æ	æ	(E)	O	o
B	b		P	p
C	c	(L)	R	r
D	d	(b)	S	s
E	e	(o)	T	t
F	f	(f)	U	u
G	g	(G g)	W	w
H	h	(h B)	X	x
I	i		Y	y
L	l		Þ	þ th (<i>thin</i>)
M	m	(C)	ƿ	ƿ th (<i>thine</i>)

'The characters between brackets were written by the Anglo-Saxons, but being for the most part mere corruptions of the Roman forms, are now seldom printed.'—Vernon's *Anglo-Saxon Grammar*.

See Isaac Taylor's *The Alphabet* (2 vols., 1883).

For the peculiarities of the different letters see each Letter: for their classification, and the defects and redundancies of the English A., see LETTERS AND ARTICULATE SOUNDS: as also BLACK-LETTER: ORTHOGRAPHY: PHONETIC WRITING.

ALPHEIUS, *al-fē'yūs* (now Rufeá, Rufiá, or Rofiá): the chief river of Peloponnesus (Morea); rising in the s.e. of Arcadia, and flowing w. through Elis, and past the famous Olympia, into the Ionic Sea. This river is one of the most celebrated in ancient song, and is connected with a beautiful and characteristic Greek legend. The nature of the upper course of the A. was such as to affect strongly the imagination of the Greeks. In its passage through Arcadia, a country consisting of cavernous limestone, and abounding in shut-in basins and valleys, it repeatedly disappears under ground and rises again. After these feats, it was deemed capable of anything—even of flowing under the sea—and the Greek colonists of Sicily thought they recognized it in their new country. Close on the margin of the sea in the island of Ortygia (the site of Syracuse), there was a beautiful and copious fountain; and just where the water of this fountain joined the sea, another strong spring bubbled up under the

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salt water. This could only be another freak of the A.; and it was popularly believed that the sweepings of the temple of Olympia, after the great festival, when thrown into the river, reappeared in the springs at Ortygia. Strabo asserts as a fact that a cup did so.

This wonderful phenomenon found its explanation, as usual, in a myth, connecting it with the history of the gods. The river-god Alphieus became enamoured of the nymph Arethusa while bathing in his stream. To escape him, she prayed to Diana, who changed her into a fountain, and opened up an underground passage for her to Ortygia. The river still pursued her, passing from Greece to Sicily below the sea, without mingling his waters with it, and appearing in the spring that bubbles up by the shore.

ALPINE, n. *ál'pín* [L. *Alpēs*, the Alps, of a Celtic origin: Gael. *alp*, a height, a mountain; said to be connected with old L. *alpus*; L. *albus*, white]: from or like the Alps; very elevated; belonging at elevated regions, as alpine flora. AL'PENSTOCK [Ger.]: staff used for ascending the Alps or any other mountain. ALP, n. in *OE.*, a high mountain; a mountain similar to the Alps or one of them.

ALPINE CLUB: a society in England for promoting exploration of the Alps; definitely constituted in 1858. The first president, Mr. Ball, had crossed the main chain of the Alps forty-eight times, by thirty-two different passes, besides traversing nearly one hundred of the lateral passes. The club has a winter and a summer dinner every year. In 1859, it published a volume, *Peaks, Passes, and Glaciers*; in 1863, the first number of the *Alpine Journal*, a valuable and flourishing periodical; between 1863 and 1868, guides to the Western, Central, and Eastern Alps. In 1884, there were about 450 members, including the most distinguished climbers of the foreign clubs. Of the daughter societies, the German Club has more than 9,000 members, the Swiss Club 2,500; there are also French, Austrian, and Italian clubs.

The first known ascent of Mont Blanc is comparatively recent; the Taupinière Blanche, the highest summit of Mont Blanc, was reached 1786, Aug. 8, by Jacques Balmat and Dr. Paccard. See MONT BLANC, SAUSSURE. At the beginning of this century only four heights were found on maps of this great Monte Rosa district; and in the sixth edition of Murray's *Handbook of Switzerland*, we read that the ascent of Mont Blanc was 'attempted by few,' and those for the most part 'of unsound mind.' Now most of the peaks of the Alps and Pyrenees have been scaled, and their configuration, geology, plants, and animals explored and recorded. The ascent of the monarch of the Alps is now regarded as comparatively easy. In 1881, forty-two parties ascended, including sixty-seven persons, of whom nineteen were French and seventeen English. In 1883, eighty-one persons ascended, in twenty-five parties. On nine occasions ladies were of the party. Of the total number, thirty-five were French. Reckless ascents of difficult peaks have led to melancholy loss of valuable lives; and occasionally sad

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accidents occur to well-planned expeditions. Of late, members of the English Alpine Club have attacked the Himalayas; and in 1883, another member, accompanied by Swiss guides, ascended Mount Cook in New Zealand.

ALPINE HUSBANDRY: characterized by the fact that the preparation of fodder is the chief object, and the cultivation of grain only secondary. In the less elevated regions bordering on the flat country, it is the practice to break up the grass from time to time, and take a succession of grain crops. In more elevated districts, the moisture of the climate and the shortness of the season of vegetation prevent crops requiring tillage from coming to perfection, and there the whole attention is devoted to pasturage and the preparation of meadow-hay. The top-dressing of the plots devoted to hay-growing, with the solid and liquid manure of the cattle, the cutting and making of the hay, and transporting it to the farm-offices, occupy a great part of the labor of the population of the Alps. They turn to account for hay-making those shelves and crevices among the mountains, inaccessible to cattle, and even goats; the herbage, which often grows luxuriantly in such situations, is cut, bound up in cloths or nets, and carried down difficult paths on the head, or is flung over the precipices.

The grass-lands in the lower regions near the dwellings being mostly reserved for hay, the cattle are pastured in summer in those regions that lie too high or too remote to be inhabited in winter. These pastures consist of plateaus and slopes, which immediately on the disappearance of the snow become clothed with a rich carpet of herbage and flowers. Each separate locality or pasture is called an *Alp*. Some of these 'alps' belong to individuals; others to the commune or parish. The more rocky and steep places are pastured by sheep and goats. There are three zones or stages in the A. pastures. The cattle are driven to the first and lowest stage about the end of May; about a month later, they ascend to the 'middle Alps'; and by the end of July, they reach the Upper Alps. As the days shorten, they descend in the same gradual way, so that the whole 'Alp-time' lasts about 20 weeks. The pastures are provided with huts for those who have charge of the cattle, who also convert the milk into cheese. Little butter is made. The departure for the 'Alps' in spring, and the return in autumn, are made the occasion of popular festivals.

ALPINE PLANTS: appellation given not only to those plants found at elevations approaching the limit of perpetual snow in the Alps of central Europe, but also to plants belonging to other mountainous regions in any part of the world, whose natural place of growth is near snows never melted even by the summer's sun. As the elevation of the snow-line, however, varies very much in different countries, according to the latitude, and also from peculiar local circumstances, the term A. P. is significant not so much of the actual elevation of the habitat, as of the average temperature which prevails there. On the Andes, near the equator, at an elevation of 12,000–15,000 ft. above the

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sea, many kinds of plants are found, of humble growth, resembling in their general appearance those which occur in Germany and Switzerland at an elevation of 6,000 ft.; and these, again, either resemble, or are even identical with, the species which in Lapland grow upon hills of very little elevation, or which, in the northern parts of Siberia, are found at the level of the sea. Similar plants occur also in the Himalaya Mountains, at elevations varying remarkably within very narrow geographical limits from local causes, which also create great differences in the general dryness or humidity of the atmosphere. The laws of this natural distribution of plants have been in our own day for the first time investigated and elucidated by Humboldt, Wahlenberg, Schouw, Decandolle, and others, and form the most essential part of a branch of science still in its infancy, and requiring further study—phytogeography, or the science of the geographic distribution of plants. When the A. P. of central Europe are spoken of, those are meant which grow at an average height of 6,000 ft., marking what, in the language of phytogeographic science, is called a *zone*. This, on its northern limit, the Riesengebirge, or Giants' Mountains, falls as low as 4,000 ft., and rises in the southern Alps and Pyrenees to an elevation of 9,000 ft., and sometimes even higher. Although very rich in forms peculiarly its own, this zone contains many plants which are likewise found on much lower hills, and even in the plains. The number of these, however, diminishes as the elevation increases. Hence the small spaces clear of snow in the highest regions possess a very characteristic flora, the plants of which are distinguished by a very low diminutive habit, and an inclination to form a thick turf; frequently, also, by a covering of woolly hairs, while their stems are very often either partly or altogether woody, and their flowers are in proportion remarkably large, of brilliant colors, and in many instances very odoriferous, upon which accounts they remarkably attract and please the occasional visitors from the plains. In the Alps of central Europe, the eye is at once caught by gentians, saxifrages, rhododendrons, and various species of primrose. With these and other phanerogamous plants are associated a number of delicate ferns and exceedingly beautiful mosses. The highest mountains in Scotland exhibit a somewhat similar flora, and beautiful plants, both phanerogamous and cryptogamous, are found on them, which never appear in lower situations, as the Alpine Speedwell (*Veronica Alpina*), the small Alpine Gentian (*Gentiana nivalis*), the Rock Scorpion Grass, or Alpine Forget-me-not (*Myosotis Alpestris*), *Azulea procumbens*, *Woodsia Ilvensis* and *hyperborea*, etc. Many A. P. are limited to a very small district. Thus, the flora of Switzerland differs considerably from that of Germany, the latter being now known to contain 3,400 phanerogamous plants, of which the former contains 2,200, and with them also 126 species which have hitherto been found only in the Swiss Alps.—There are, moreover, particular species of plants found only in single localities, as *Hypericum coris* upon the mountain of Wiggis, in the canton of Glarus; *Wulfenia Carinthiaca*, upon the Kùweger Alp, in

ALPINI—ALPNACH.

Upper Carinthia, and many others. There are, however, many species which, occurring on the mountains of central Europe, appear also in those of Britain and of Scandinavia at lower altitudes, but are not found in the intervening plains. See SPECIES, DISTRIBUTION OF.—Cryptogamic plants are generally found in Alpine regions in much greater abundance than elsewhere. The transplanting of *A. P.* into gardens is attended with great difficulties, and is rarely successful. Their great beauty, even when dried, makes them favorites with some plant collectors. Small herbaria of them are offered for sale everywhere in Switzerland; and in some places, large collections have been prepared and are open to the public.

ALPINI, *âl-pè'nw*. PROSPERO: 1553-1617; b. Marostica, in the republic of Venice: celebrated physician and botanist. For a time he served in the Milanese army, but left it to study medicine. He gave particular attention to the science of botany, and during a three years' stay in Egypt, where he went as physician to the Venetian consul, devoted himself to this study, acquiring a wide botanical knowledge. He was perhaps the first to notice the sexual differences of plants, and in his treatise *De Medicini Egyptiorum* first called the attention of Europeans to the coffee-plant. He resided at Genoa for some years, and held rank as the foremost physician of the day; afterwards he was appointed professor of botany in the Univ. of Padua, where he continued until failing health compelled him to give up his work. The genus *Alpini* is named in honor of him. He was the author of several Latin books.

ALPINIA: see GALANGALE.

ALPNACH, *âlp'nâk*, or ALPNACHT, *âlp'nâkt*: Swiss village, in the canton of Unterwalden, at the foot of Mount Pilatus, $1\frac{1}{2}$ m. from that part of Lake Lucerne called Lake A. It is known principally on account of its celebrated 'slide,' a sort of wooden trough by which the felled timber of Mount Pilatus was conveyed with amazing velocity from a height of 2,500 ft. down to the lake. To prevent friction, the trough was perpetually lubricated by a slender rill of water. It is no longer used, the wood being now drawn down by horses and oxen. Population of A., 1,700.

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ALPS, *álps*: the most extensive system of lofty mountains in Europe, raising their giant masses on a basis of 90,000 sq. m., between 6° 40' and 18° e. long., and extending in some places from the 44th to the 48th parallel of latitude. The word *Alp* or *Alb*, signifying in the Celtic language 'white,' was the name given to these mountains on account of their tops being perpetually covered with snow. The Alpine system is bounded on the n. by the hilly ground of Switzerland and the upper plain of the Danube; on the e., by the low plains of Hungary; on the s., by the Adriatic Sea, the plains of Lombardy, and the Gulf of Genoa; and on the w., by the plains of Provence and the valley of the Rhone. A string of lakes encircles both the n. and s. bases of these mountains, the former at an elevation of 1,200-2,000 ft.; the latter, 600-700 ft. The varied natural scenery of France, Italy, Germany, and Hungary has a common centre of union in this lofty region. Valleys open out in all directions, sending their melted snows on one side into the North Sea, on another into the Black Sea, and on another into the Mediterranean.

The *water-system* of the A. may be thus briefly sketched: 1. In the basin of the Rhine, there is the Rhine itself, which partly forms the Lake of Constance, at the n.e. extremity of Switzerland, and receives on the left the important tributaries of the Thur and the Aar; the latter of which flows through lakes Brienz and Thun, and is itself augmented by various affluents, the largest of which are the Reuss and the Limmat. 2. In the basin of the Danube there flow from the s. the Iller, Lech, Isar, and the Inn. Still further e. the Danube has for its tributaries the Traun, the Ens, the Raab, the Drave, and the Save, the last three of which have their sources in the extreme eastern A. 3. In the basin of the Po are numerous streams which rise in the southern A.; the principal are the Dora Baltea, the Sesia, the Ticino from Lake Maggiore, the Mincio from Lake Garda, and the Adige. 4. In the basin of the Rhone, are the Rhone (flowing through the Lake of Geneva), and various Alpine tributaries; most important are the Arve, the Isère, and the Durance. 5. The Var is the principal Ligurian coast-stream; the Piave and the Tagliamento the largest of those which fall into the Adriatic from the southern A.

Divisions—In order to give a clear view of the manifold ranges of this mountain land, a distinction is generally made between the East, the West, and the Middle A.; the last of which is again divided into a northern, central, and southern chain; while a natural separation by river-valleys into groups is also made. I. **WEST A.**—The principal ranges of these are: 1. The Maritime A., from the middle Durance s. to the Mediterranean; rising in the Rocca dell' Argentera to 10,795 ft. 2. The Cottian A., n. of these, whose highest summit, Monte Viso, is 13,599 ft. 3. The Graian A., forming the boundary between Savoy and Piedmont, and attaining in Mont Iséran an elevation of 13,272 ft., and in Mont Cenis, of 11,457 ft. II. **MIDDLE A.** *Central Chain.*—1. The Pennine A., between the plains of Lombardy and the valley of the Rhone. Highest summits:

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Mont Blanc, 15,744 ft.; Monte Rosa, 15,151 ft.; Mont Cervin, 14,836 ft. 2. The Lepontian or Helvetic A., from the depression of the Simplon, along the plateau and masses of St. Gothard (12,000 ft.), to the pass of Mont Splügen. 3. The Rhaetian A., between the Inn, the Adda, and the Upper Adige. *Northern Chain*.—1. The Bernese A., between the Rhone and the Aar: highest summits; Finsteraarhorn, 14,026 ft.; Jungfrau, 13,716 ft.; Schreckhorn, 13,897 ft. 2. The A. of the Four 'Forest Cantons,' the Schwytz A., etc. *The Southern Chain*.—1. The Oertler A., between the Adda and the Adige; highest summit, Oertlerspitz, 12,822 ft. 2. The Trientine A., between the Adige and the Piave; highest summit, La Marmolata, 9,803 ft. III. EAST A.—The principal chains are: 1. The Noric A., between the plains of the Drave and the Danube; highest summit, Gross-Glockner, 12,431 ft. 2. The Carnic A., between the Drave and the Save. 3. The Julian A., between the Save and the Adriatic Sea; highest summit, Mont Terglu, 9,366 ft.

Elevation.—As a general rule the A. are lowest where the system is broadest, that is, in the e.; and highest where the system is narrowest, that is, towards the w. Making a threefold distinction of crests, summits, and passes, the principal ranges may be characterized as follows. The crest-line (1) of West A., 6,000–11,000 ft.; (2) of Middle A., 9,000–13,000 ft.; (3) of East A., 3,600–9,000 ft. The summits; (1) of West A., 9,000–14,000 ft.; (2) of Middle A., 9,000–15,800 ft.; (3) of East A., 6,000–12,000 ft. Height of the passes: (1) of West A., 4,000–8,000 ft.; (2) of Middle A., 6,500–11,000 ft.; (3) of East A., 3,500–6,000 ft.

A comprehensive classification leads to a division of the elevations into three regions; 1. The lower range forming the buttresses of the main masses, and reaching a height of 2,500–6,000 ft.; that is, to the extreme limit of the growth of wood. 2. The middle zone between the former limit and the snow line at the elevation of 8,000–9,000 ft. 3. The high A., rising to 15,744 ft. The middle zone forms the region of mountain-pasturages, where the characteristic Alpine dairy-farming is carried on. These pastures consist of a rich carpet of grass and flowers. This threefold division of heights, however, does not everywhere coincide with the same phenomena of vegetation: the line of perpetual snow descends lower on the n. side, and the boundaries of the zones above described vary accordingly. 1. The line of demarcation between the region of mosses and Alpine plants and that of perpetual snow, is from 8,000–9,000 ft. on the n. declivities; but on the s., it approaches 10,000 ft. 2. The highest limit to which wood attains on the n. is about 6,000 ft., while on the s. it is nearly 7,000 ft. 3. Grain, beech, and oak, on the n., disappear at the elevation of 4,000 ft.; on the s., they exist, some hundreds of feet higher. 4. The region of the vine, as well as of maize and chestnuts, extends to an elevation of 1,900 ft. on the n. declivity; and on the s. declivity, to 2,500 ft. The ranges of outlying lower mountains which flank the high central Alps on the n., e., and w., are mostly wanting on the s., especially where the Middle A. descend into the plains of Lombardy. Thus

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the A. rise in steep rocky precipices from the level of the flat plains of the Po, while they sink more gradually into the plains on the n.; hence their mighty masses closely piled together present an aspect from the s. more grand and awful; from the n., more extended and various.

Valleys.—The variety in the valleys as to form and arrangement is not less striking than in the elevations. Most worthy of notice is the characteristic form of the wide longitudinal valleys at the foot of the high central chains. On the e. they open directly into the plain; on the n., they are connected with the plain through transverse valleys which often end in lakes. The transverse valleys on the s. are mostly in the shape of steep rocky ravines, forming in some parts long-stretching lakes. Beside the deep-sunk principal valleys, there are extensive series of basin-shaped secondary valleys, the scenes of Alpine life properly so called. Many Alpine valleys have names distinct from the rivers flowing through them. Thus, the valley of the Rhone is styled the Upper and Lower Valais; that of the Adda, the Valteline; of the Arve, Chamounix.

Communications—Passes.—The valleys of the high A. form the natural means of communication. Some are more accessible than others. The entrance into a longitudinal valley is almost always smooth and easy; art has often had to force an entrance into a transverse valley. On many of the high roads which link the principal with the secondary valleys, it has been found necessary to blow up long ridges of rock, to build terraces, to make stone-bridges and long galleries of rock as a protection against avalanches, as well as to erect places of shelter (*hospices*) from storms. The construction of these roads may be reckoned among the boldest and most skilful works of man. In crossing the A., several defiles (usually seven) have to be traversed; for in addition to the pass of the main crest, there are other defiles on both sides at the entrances of the different valleys. In the e., the number of these narrow passes or defiles is considerably increased. The names applied to the Alpine passes vary according to their natural features or the local dialect; as Pass, Sattel (Saddle), Joch (Yoke) Scheideck, Klaus, Col, Chiusa. The traveller, in the course of a day's journey, experiences a succession of climatic changes, with an equal variety in the manners of the people.

No lofty mountains in the world are so easily crossed as the A. Hence we can understand how the plains of Upper Italy, accessible from the French, German, and Hungarian sides, have been the theatre of bloody strife for ages. The passage of the West A. is made by five principal roads: 1. The military road, La Corniche, a coast-road at the foot of the A. from Nice to Genoa, parallel to which a railway now runs. 2. The causeway over the Col-di-Tenda, between Nice and Coni, made in 1778; highest point, 5,890 ft. 3. The high-road over Mt. Genève, connecting Provence and Dauphiné with Turin; highest point, 6,550 feet. 4. The carriage-road made by Napoleon in 1805, over Mt. Cenis, connecting Savoy with Piedmont; highest point, 6,770 ft. Near this the chain is pierced by

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the railway tunnel. See TUNNEL, and CENIS. 5. The pass of the Little St. Bernard, connecting Geneva, Savoy, and Piedmont; highest point, 7,190 ft. By this pass Hannibal crossed into Italy. It is not much used now. Besides these great roads there are many smaller ones branching from them, which form a network of communication. The passage of the MIDDLE A. is made by eight principal roads: 1. That of the Great St. Bernard, connecting the valley of the Rhone with Piedmont; highest point, 8,170 ft. It was crossed by Napoleon in 1800. 2. The magnificent road over the Simplon, constructed by Napoleon, 1801-06, connecting the Valais with the confines of Piedmont and Lombardy; highest point, 6,570 ft. 3. Between the Great St. Bernard and Monte Rosa is the Col of Mont Cervin, the loftiest pass in Europe, nearly 11,200 ft., connecting Piedmont with the Valais. 4. The pass of St. Gothard, connecting Lucerne with Lago Maggiore; highest point, 6,800 ft. The borings of the railway tunnel met in 1880. 5. The Bernardin Pass, made 1819-23 by the Swiss Grisons and Sardinia; highest point, 6,800 ft. 6. The Splügen Pass, repaired in 1822, connecting the sources of the Rhine with the Adda. This pass was the one used by the Romans in their intercourse with the countries bordering on the Danube and the Rhine, and also by the German armies on their marches into Italy in the middle ages. 7. The Wormser Joch, also called the Orteles Pass, or Road, opened by Austria in 1824. It is the loftiest carriage-road in Europe, and connects the Tyrol with Lombardy. 8. The Brenner Pass, known to the Romans. It also connects the Tyrol with Lombardy; highest point, 4,650 ft. It is now crossed by a railway. Besides these great roads leading s. into Italy, there are two which lead n. from the valley of the Rhone, and cross the Bernese A., over the Grimsel Pass, 6,500 ft high, and the Gemmi Pass, 7,400 ft. high. The roads over the EAST A. are much lower, and also much more numerous than those in the MIDDLE or WEST A. The principal are—1. The road from Venice to Salzburg, crossing the Noric A. at an elevation of rather more than 5,100 ft. 2. The road over the Carnic A., which divides into three branches—the first leading to Laybach; the second to the valley of the Isonzo, and the third to the valley of the Tagliamento. 3. The roads from the Danube at Linz to Laybach.

Geology.—The A. offer a rich field for geological investigations, the results of which hitherto may be thus summed up: The highest central mass—the Primary A., as they are called—that rises from the plain to the s.w. of Turin, and stretches in a mighty curve to the Neusiedlersee, in Hungary, consists chiefly of the crystalline rocks, gneiss and mica-slate, with a much smaller proportion of granite. Inclosed among the Central A. appear representatives of the carboniferous and jurassic formations, but so altered and become so crystalline that their age can only be guessed from a few remaining petrifications, which are accompanied here and there by garnets. In the Graian, Pennine, and Rhaetian A. occur great masses of serpentine; in the n. of

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Piedmont, and in the upper valley of the Adige, quartz-porphry. In the e. there are, on the n. and s. sides of the chief range, vast deposits of clay-slate and grauwacke mixed with transition limestone.

Beginning on the Mediterranean coast, and following in general the direction of the central chains, a belt of sedimentary rocks runs along the w. and n. sides to the neighborhood of Vienna. On the s. side a similar belt runs from Lake Maggiore to Agram. The undulating curves and colossal dislocations presented by these regions show that the form of their mountains must have been the result of a mighty force acting northward and southward from the Central A. In respect of age, these sedimentary or calcareous A. include all the members of the series of formations from magnesian limestone up to the lowest strata of the tertiary group. The s.e. portion of these calcareous mountains, forming the Julian A., consist mostly of cavernous rocks of the Jurassic and chalk groups, and are continued with this character into Dalmatia.

Minerals.—Precious stones are found in abundance in the trap and primary mountains, especially in the region of the St. Gothard. The rock-crystal of St. Gothard has a world-wide reputation. Mining and smelting become more and more productive to the eastward. Switzerland itself is poor in useful ores. Gold and silver are found in Tyrol, Salzburg, and Carinthia; there are silver mines also in Styria and Illyria, and one near Grenoble, in France. Copper is found in the French A., in Tyrol, and Styria. The lead-mines near Villach, in Carinthia, yield yearly about 35,000 cwt. The yield of iron in Switzerland, Savoy, and Salzburg is small; Carinthia, on the other hand, produces 260,000 cwt., and Styria 450,000 cwt. Quicksilver is extracted at Idria, in Carniola, to the amount of 1,000–1,500 cwt. The Alpine region is rich in salt, especially at Hall in Tyrol, and Hallein in Salzburg. Coal is found in Switzerland, in Savoy, and in the French A., but in no great quantity; the Austrian A. are richer in this important mineral. The mineral springs, hot and cold, in the region of the A. are innumerable. See AIX; ISCHL; LEUK; BADEN, etc.

Animals.—The mountains present many peculiarities worthy of notice in the animal as well as in the vegetable kingdom. See ALPINE PLANTS. On the sunny heights the number of insects is very great; the butterflies are especially numerous. There are few fishes, although trout are sometimes caught in ponds even 6,000 ft. above the level of the sea. Although the lofty mountains are inhabited by eagles, hawks, and various species of owls, yet the birds are few in comparison with the numbers in the plains, and those few are mostly confined to the larger valleys. Among the quadrupeds, the wild goat is sometimes, though rarely, met with; the chamois is more frequently seen, chiefly in the e. districts. The marmot inhabits the upper Alpine regions. Wolves are seen more frequently in the w. than in the e.; in the e. bears, lynxes, and wildcats are found, although constantly diminishing in number. Of the domestic animals, goats and oxen are scattered everywhere in large

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herds. There are fewer sheep and horses, and these not of good breeds. Mules and asses are used more frequently in the s. than in the n., especially as beasts of burden. Swine and dogs are not common; the latter are used almost solely by the herdsmen, or are kept in the hospices, to assist in searching for the unfortunate wanderers who may be lost in the snow.

The Alpine mountains are rich in singularly beautiful natural scenery, of which the inhabitants of flat countries can scarcely form an idea. Nature in the A. has an infinite variety of aspects. Here the hardened masses of the icy glacier cover the naked rock, avalanches are hurled into immeasurable abysses, the fall of rocks or mountain-slips overwhelm the dwellings, and cover the fields in the valleys; and in the e., the *bora*, with its hurricane strength, hurls before it the upraised masses of snow. There the sun glances upon the scattered silver threads of a water-fall, or mirrors himself in a glassy lake, while his rising and his setting are announced to the expectant traveller by the ruddy glow on the snowy mountain-tops. The inhabitant of the A., surrounded on every side by mountains, is unconsciously subdued by their presence, and receives from them a peculiar stamp of character; their dangers fascinate him as well as their charms. The most ceaseless variety of occupation demands all his time and his thoughts; in the mountains he acknowledges his only despots, who seize his soul, and lead it unresistingly. In his constant struggle with the elements, the Alpine dweller strengthens both his mind and his body; he opens his heart to the impressions of nature, he gives utterance to his childlike gladness in simple songs, and at the same time defends with self-sacrificing devotion his mountain-fortresses against foreign aggression. But the manners and spirit of the neighboring plains have penetrated into the larger valleys with the dust of the highway. There the true Alpine life has more and more passed away. The simplicity and characteristic industry of the Alpine farms are now preserved only in the higher secondary valleys.

These states share the A. The w. portion is shared by France and Italy. Switzerland claims the Middle A. almost exclusively. Bavaria has only a small share. Austria has the largest share of the A.—in the provinces of Tyrol, Illyria, Styria, and the archduchy. The wide valleys opening to the e. allow the civilization of the plains to enter easily among the mountains. The value of the minerals, and the fertility of the soil, have permitted mining, manufactures, and agriculture to take firm root, and a flourishing trade has caused large towns to take the place of mere Alpine villages. In the Tyrol, the pastoral life of the mountains has long been mixed up with the working of mines of salt or other minerals. The inhabitants of whole valleys are occupied in various branches of industry to a greater extent than in any other district of the A., and their sons travel far and near as artisans. See H. and A. Schlagintweit, *Researches into the Physical Geography of the A.* (*Untersuchungen über die Physikalische Geographie der Alpen*), Leipzig. 1850.

ALPUJARRAS—ALSACE.

ALPUJARRAS, *ál-pó har'rás*: [a corruption of an Arabic word which signifies 'grass'—an allusion to the excellent pasturage on the n. side]: a range of mountains in Spain parallel to the Sierra Nevada, and approaching the coast of the Mediterranean Sea. Their s. side is precipitous, but the n. slopes away into broad valleys, beyond which rises the Sierra Nevada. They commence in the w. at Motril, where they are separated by the Guadalfeo, from the lower Sierra de Holucar, and the adjacent vine covered hills of Malaga, and stretch as far e. as the river Almeria. The range is divided into two parts by the Adra, each of which bears a particular name. The highest peaks reach an elevation of 7,000 ft. On the n. side, owing to the copious rains, there is the richest pasturage, both in the deep valleys and on the uplands. The s. slope, however is almost destitute of trees or shrubs, with the exception of the fertile valleys near the sea, which are abundantly watered by numerous little streams. Here flourish, under an almost tropical climate, all the products of the s., even the date-palm and the sugar cane. The inhabitants are chiefly employed in rearing sheep, and in cultivating the vine and other fruits. A little mining also goes on. Lead, antimony, and silver are got. The Moorish element is still quite discernible in the population of this mountain region.

ALQUIFOU, n. *ál-kí-fó* [Sp. *alquifol*, potters'-ore]: an ore of lead called potters'-ore, giving a green varnish to pottery.

ALREADY, ad. *awl-réd'í* [OE. *al-redy*: *all* and *ready*]: now; at this time; at some time past.

ALRED, or **ALREDUS**: see **ALURED**.

ALSACE, *ál-sás'*: c. German dist., forming, with Lorraine, an imperial territory (Reichsland), reunited (all but the small district of Belfort) to that country in 1871, after two centuries' possession by France. It lies between the Rhine on the e. and the Vosges Mountains on the w., extending s. to Switzerland, and n. to Rhenish Bavaria, 3,360 Eng. sq. m. It is exceedingly fertile; rich also in mines and manufactures; and contains the important cities of Strasburg, Colmar, and Mülhausen. In Cæsar's time it was occupied by Celtic tribes; but during the decline of the empire, the Alemanni and other tribes from beyond the Rhine occupied and completely Germanized it. It afterwards formed part of the German empire, under various sovereign dukes and princes, latterly of the House of Hapsburg; till a part of it was ceded to France at the peace of Westphalia, and the rest fell a prey to the aggressions of Louis XIV., who seized Strasburg (1681) by surprise in time of peace. By the peace of Ryswick (1697), the cession of the whole was ratified. Thus—as the Germans used to complain—was this fine land, and one of the noblest branches of the race, alienated from the German people, and the command of the German Rhine disgracefully surrendered to the enemy in the time of misfortune, and, more disgraceful still, not demanded back when fortune favored. German never ceased to be the language of the

ALSEN—ALSTRÆMERIA.

people, and all newspapers were, during the whole period of the French possession, printed in both languages. Pop. of Alsace-Lorraine (1880) 1,566,670.

ALSEN, *ål'sen* (Dan. *Als*): island in the Baltic, in the Prussian province of Slesvig-Holstein, and extending from the Apenrade to the Flensburg Fiord; separated from the mainland by the Sound of A., in part very narrow and deep. Its greatest length is nearly 20 m.; its greatest breadth about 12; lat. 54° 46' n., long. 9° 52' e. The island, one of the finest in the Baltic, has a picturesque appearance, is very fertile, with rich woods, and numerous lakes abounding in fish. Its fruit-trees are celebrated over all Slesvig. The Gravenstein apple, in particular, is an important article of commerce. The chief towns are Sonderborg or Südborg (South Town), and Norborg or Nordburg (North Town). The former has an excellent harbor. Pop. (1880) 5,863. Close to the harbor are the ruins of an old and famous castle belonging to the Augustenborg family. Here Christian II. of Denmark and Norway was confined, 1532-49. In the war of 1864, A. was taken by the Prussians from the Danes.

ALSO, ad. *awl'sō* [AS. *alles swa*, all so]: likewise; in like manner. ALS, in *OE.*, also; likewise.—*SYN.*: too; likewise; besides.

ALSTER, *ål'stēr*: river in Holstein, formed by the confluence of three streams, and, in the neighborhood of Hamburg, spreading itself out, and forming a lake, called the Great or Outer A., and within the town, the Inner A. It flows by several canals into the Elbe.

ALSTON: see ALDSTONE.

ALSTONITE, n. *ål'stōn-īt*, a mineral of a snow-white or grayish yellow color, so called from occurring in the lead-mines of Alstone Moor, Cumberland.

ALSTRÆMERIA, or ALSTRÆMER'S LILY: genus of plants of the natural order *Amaryllidæ* (q.v.), and, according to Lindley, of the tribe *Alstræmeriæ*; distinguished by fibrous—not bulbous—roots, and by having the outer segments of the perianth different in form from the inner. In this genus, the two lower segments are somewhat tubular at the base, the capsules do not gape when ripe, are 3-valved or pulpy within, and the seeds globose. The leaves are twisted, so that what should be the upper surface, becomes the lower. The species are numerous, natives of the warmer parts of America. Many of them have tuberous roots. Some are sufficiently hardy to endure the open air in Britain, and are admired ornaments of flower gardens. Some have climbing or twining stems; among these is the *salsilla* (*A. salsilla*), a plant of great beauty, with lanceolate leaves, a native of Peru, which is cultivated in the West Indies, and its tubers eaten like those of the potato. *A. ovata*, also a beautiful plant, with a slender twining stem, and ovate leaves, is cultivated in Chili for its tubers, which are used as food. The tubers weigh from 3 to 6 ounces. A kind of arrow-root is also prepared in Chili from the succulent roots of *A. pallida* and other species.

ALT—ALTAR.

ALT or **ALTO**, n. *ält, ältō* [It.—from L. *altus*, high]: the highest note that can be sung with the natural voice by men; the part sung by the lowest female voices; a voice intermediate between tenor and soprano. **IN ALT**, said of the sounds of the treble stave, from G up to F.

ALTAI, ält-ti', THE, or ALTAI MOUNTAINS: one of the four parallel chains which constitute the skeleton of Eastern High Asia, covering the great table-land. The A. forms an alpine girdle, intersected by wide valleys traversed by many streams, among which are the Tez River, flowing w. to the Ubsa Nor (lake), and the Kobdo, flowing s. to the Tke Aral Lake. The general direction of the range is from w. to e., about the parallel of 50° n. It extends between the meridians of 84° and 100° e. On the e., the A. is separated from the Daurian mountain-system by lakes Kosgol and Baikal; on the w. it terminates in the Katunsk Mountains, a small isolated group, in which Mount Beluka rises to 12,790 ft., far above the line of perennial snow, with extensive glaciers on its w. flanks. The climate of the A. is not so severe as might be inferred from its position. The winters are frequently mild, and comparatively little snow falls. The mountain slopes are covered with rich grass, and their flanks are in many parts adorned by magnificent cedar forests. Stags, hares, and wolves abound in the lower, and bears in the higher portions of the range. The A. is celebrated for its gold, silver and lead mines. Barnaul, on the n. slope of the range, is the chief mining town; and the village of Zeminogorski, s. of Barnaul, is in the centre of the richest silver mines in the Russian empire. Jasper is found near the summits, red porphyry lower down, and granite still lower. Around Lake Baikal are numerous granitic masses, interspersed with newer igneous formations. N. of the Ubsa Nor (lake), the Tangnu Ula Mountains, connected with the A. on the n., rise to upwards of 11,000 feet. They furnish abundance of excellent white marble.

ALTAMURA, ält-tä-mō-rä: town of s. Italy, 28 m. s.w. of Bari; at the e. base of the Apennines. It has a magnificent cathedral. The surrounding country is fertile, produces much oil and wine, and abounds in rich pastures. Pop. 20,000.

ALTAR, n. *aul'tér* [OF. *auter* and *alter*—from L. *altäre*, an altar for sacrifice—from L. *altus*, high: perhaps connected with Icel. *eldr*, fire; *arn*, a hearth; or AS. *ern*, a place]: a small square or round erection of turf, wood, or stone, varying in height, on which animals were burnt—these were called sacrifices; a name sometimes given to the communion-table. **ALTARAGE**, n. *aul'tér-äj*, profits arising to priests from oblations. **ALTAR PIECE**, a painting or decoration placed over an altar. **ALTAR-CLOTH**, in a church, the cloth laid over an altar. **LED TO THE ALTAR**, brought there for the rites of marriage, said of a woman; married.

ALTAR: a small erection of stone, wood, or turf, whereon offerings were laid in the religious worship of ancient Israel, and of heathen nations. The first on record is that

ALTAR.

which Noah built on leaving the ark. The Israelites, after the giving of the Law, were commanded to make an A. It appears from the Old Testament (1 Kings, iii. 3; 1 Kings, xi. 7; 2 Kings, xxiii. 15), that altars were often erected on high places—sometimes, also, on the roofs of houses. In the Jewish tabernacle and temple, each, there were two altars, one for sacrifices, and another for incense. For minute description of these, see Exodus, Leviticus, and Numbers. The Jewish and oriental altars were generally either square, oblong, or approximating to those shapes; those of Greece and Rome were often round. Heathen sacrifices were offered to the infernal gods, not on altars, but in cavities dug in the ground.

The word has been transferred into the Christian system. For upwards of five centuries, altars in the Christian churches were, for the most part, made of wood; but in 509, it was decreed by the council at Epone, in France, that none should be



Roman Altars.

consecrated with chrism except those built of stone. In the first ages of Christianity, there was not more than one A. in a church; but, from a very early time, the Latins have used more than one. In the 12th c., the adorning of churches with images and numerous altars was carried to a great extent, and they were embellished with gold, silver, and precious stones. The Greek Church use but one A. Altars were frequently placed at the w. end of the ancient churches, instead of the e., but in England almost uniformly in the e. The only perfect A. of the old times in England is the high A. of Arundel Church, Sussex. The slab is 12 ft. 6 in. long, by 4 ft. wide, and 2½ in. thick. The support is of solid stone, quite plain, and plastered over. Turullian (latter half of 2d c.) uses the word A. to denote the Lord's Table, and this was the usage probably from much before his time for nearly 300 years; subsequently 'table' and 'altar' were used indifferently. In the first Prayer-book of king Edward, 1549, the word A. was used in the Rubric, and the Lord's Supper was still called the Mass; but in 1550, an order was issued for the setting up of tables instead of altars, and in the second Prayer-book of 1552 the word *altar* was everywhere replaced by *table*. The table was further ordered to be wood and movable. In Mary's reign the altars were re-erected; but in Queen Elizabeth's, some were riotously pulled down, and injunctions were then issued directing that this should not be done, except under the oversight of the curate and at least one churchwarden. It was charged against Archbishop Laud that he had converted communion-tables into altars. What he really did was to remove the tables out of the body of the church, and place them 'altarwise,' i.e., n. and s., at the upper end of.

ALTAZIMUTH—ALTDORFER.

the chancels, where the altars formerly stood; and a dog having on one occasion run away with a piece of the consecrated bread, he directed that rails should be erected to prevent such desecration in future. The old stone altars used frequently to be made in the shape of tombs, and they inclosed relics; this was from the early Christians having often celebrated the eucharist at the tombs of the martyrs, or, as others say, they were thus made with the design of representing Christ's humanity as having been real, and vouched for by the fact of his body lying in the tomb. The Credence Table and Piscina are adjuncts of an A. In England, by the judgment in the Arches Court, 1845, in the case of *Faulkner v. Litchfield*, it was decided that altars may not be erected in churches. This case arose out of the erection, by the Cambridge Camden Society, of a stone A. in the Church of the Holy Sepulchre in that town.

The old English divines, and, indeed, all Protestant ecclesiastical writers of any importance, are unanimous in the opinion that among Christians the word cannot mean what the Jews and heathens expressed by it. The later fathers used various phrases to denote the solemnity which should attach to the communion-table, such as 'the Mystical and Tremendous Table,' 'the Mystical Table,' 'the Holy Table,' etc. And they termed it an A., because, first, the holy eucharist was regarded as a kind of commemorative sacrifice, or, more properly, a consecrated memorial before God of the great sacrifice on Calvary; and, second, the prayers of the communicants were held to be in themselves sacrifices or oblations—sacrifices of thanksgiving, as it were. This is the view of those who hold high-church opinions, but does not exclude the other view. Again, they termed it a *table* when the eucharist was considered exclusively in the light of a sacrament, to be partaken of by believers as spiritual food. In the former case the sacrifice was commemorated; in the latter it was applied: in the former it expressed more directly the gratitude; in the latter, more directly the faith of the Christian.

ALTAZIMUTH, n. *ält-äz'i-müth* [L. *altus*, high; and *azimuth*]: an instr. for taking azimuths and altitudes simultaneously—the form most generally used being that called the *theodolite*. See **AZIMUTH**.

ALTDORFER, *ält'dor-fēr*, **ALBRECHT**: 1488–1538; b. Altdorf, Bavaria; d. Ratisbon: painter and engraver. He is said to have been a pupil of Albert Dürer; but this is not certain. He belongs, however, to that religious school of artists of which Dürer was the head. His pictures are also animated by a glowing and romantic spirit of poetry, delightful to one who appreciates the conditions of old German life. The landscape is delineated with the same truth and tenderness as the figures; a rich manifold life pervades the scenes, and everything is handled with the utmost delicacy. His masterpiece, now in Munich, is *The Victory of Alexander over Darius*, a painting which, it is said, affects the beholder like a heroic poem. As an engraver, A. is reckoned among the lesser masters.

ALTEA—ALTEN-ÖTTING.

ALTEA, *ál-tá'-á*: seaport of Valencia, Spain; 25 m. n.e. from Alicante. Pop. 6,000.

ALTEN, *ál'tén*, **KARL AUGUST**, Count of: 1764, Oct. 20—1840, April 20: one of the chief Hanoverian generals in the French and German war. He entered the army in 1781, and gained distinction at the siege of Valenciennes, and in the decisive engagement at Hondschooten. He was first lieutenant in 1800, but, on account of the unhappy capitulation at Lauenburg, found it advisable to leave Hanover, and came to England. Here he was made commander of the first light battalion in the German Legion (1803); and was in many battles, notably in the siege of Badajoz and the battle of Albuera, and in almost all the engagements of the Spanish war of liberation—at Salamanca, Vittoria, the Pyrenees, Nivelle, Nive, Orthez, Toulouse, etc. A. had the command of a corps of 30,000 men, stationed near Madrid, in 1812. He fought with great distinction at Quatre-Bras and at Waterloo, where he was severely wounded, after greatly contributing to the decision of the battle. Returning to Hanover, he was made minister of war, and in this capacity died.

ALTENA, *ál'té-ná*: town of Westphalia, Prussia, 40 m. n.e. of Cologne, in a deep and picturesque valley. It manufactures needles, pins, and hardware. Pop. (1880) 8,787.

ALTENBURG, *ál'tén-boorg*: cap. of the duchy of Saxe-Altenburg; in a fertile country, about 24 m. from Leipzig. On an almost perpendicular rock of porphyry, the old castle of A. is a striking feature in the landscape. Its foundations are probably as old as the 11th c. A. has several excellent educational institutions, a museum, and a theatre. Brushes, gloves, and cigars are among the chief manufactures carried on in A., and the book-trade is considerable. A railway connects it with Leipzig and Bavaria. Pop. (1880) 26,241.

ALTENGAARD, *ál'tén-gord'*, or **ALTEN**: seaport town, prov. of Finmarken, Norway; at the mouth of the river Alten; lat. 69° 55' n., long. 23° 4' e. Northward from this point, no cultivation is attempted; and even here, potatoes and barley alone are produced. A. has a harbor and considerable trade. It is visited principally by Russian and Norwegian vessels. Pop. about 1,000.

ALTEN-ÖTTING, or **ALTÖTTING**, *ét'ting*: a place of pilgrimage not far from the Inn; in one of the most beautiful and fertile plains of upper Bavaria. It may be called the Loretto of Germany, being frequented by thousands of Rom. Catholics from Austria, Bavaria, and Swabia, on account of a famous image of the Virgin Mary (the '*Black Virgin*') which it possesses; it has also an extraordinarily rich treasure of gold, silver, and precious stones. A. was the headquarters for Germany of the Redemptorist fathers from 1838 till their expulsion in 1873. There is also a Capuchin monastery here. A. was originally a *villa regia*. Several German emperors, such as Henry III. and Henry IV., held their court here. The emperor Leopold I., and other princes of the house of Hapsburg, made pilgrimages to it. A chapel, called Tilly's or Peter's Chapel, contains the tomb of Count

ALTER—ALTERCATE.

Tilly, who was buried here at his own request. Maximilian I. and numerous other princes and princesses of the Bavarian family have had their hearts interred in it. Pop. (1880) 3,168.

ALTER, v. *awl' tēr* [L. *alter*, another; *altēro*, I change; F. *altérer*, to alter—*it.*, to make a thing other than what it is]: to change; to vary; to make different in some way. **AL'TERING**, imp. **ALTERED**, pp. *awl' tērd*. **ALTERABLE**, a. *awl' tēr-ā-bl'*, capable of being changed; that may be varied. **AL'TERABLY**, ad. *-bli*. **ALTERABLENESS**, n. *awl' tēr-ā-bl' nēs*, or **ALTERABILITY**, n. *awl' tēr-ā-bl' i-ti*, the capacity for being changed. **ALTERATION**, n. *awl' tēr-ā' shūn*, a varying in some way; a change. **ALTERATIVE**, a. *awl' tēr-ā' tīv*, having the power to change or alter: N. a medicine supposed to have the power of producing changes in the constitution or habit of body.

ALTERA'TIVES, *awl' tēr-ā' tīvz*, in Medicine: remedies that have the power of changing the state of the living solids of the body, and consequently of altering their functions. The term is generally applied, however, to medicines which in full doses are irritant, but which almost imperceptibly alter disordered actions or secretions, by acting specially on certain glands, or upon absorption in general, when they are given in comparatively small doses through a considerable time. For example, mercury is an irritant in some of its preparations; but when small doses of blue-pill, Plummer's pill, or corrosive sublimate are given at intervals for some time, they 'produce *alteration* in *disordered* actions, so as to cause an improvement in the nutrient and digestive functions, the disappearance of eruptions, and the removal of thickening of the skin or of other tissues' (Royle); and they will effect these changes without otherwise affecting the constitution or inducing salivation. So iodine, also an irritant in concentrated doses, and poisonous in some forms, is most useful when given in small doses in effecting the removal of enlarged glandular organs, and need not cause iodism if carefully given.

The preparations of gold are likewise stimulants of the absorbents, and are used in cases of scrofula. Some preparations of arsenic are powerful A. in cases of skin-disease. So also are the decoctions of the *woods* and their substitutes, such as decoction of sarsaparilla, and the like, which, when taken in large quantities of water, must operate partly by their diluting and solvent properties, and partly by the stimulant effect of the active principles of the several ingredients in these diet-drinks, conveyed into the capillaries.

Thus the term A. rather implies the method in which some drugs are administered than any special alterative action inherent in them. The most useful are also the most dangerous in unskilled hands.

ALTERCATE, v. *āl' tēr-kāt'* [L. *altercātus*, contended, disputed—from *alter*, another—*it.*, to have a debate with another]: to contend in words; to wrangle. **AL'TERCA'TING**, imp. **AL'TERCA'TED**, pp. **ALTERCATION**, n. *āl' tēr-kā' shūn* [F.]: a contention in words; a wrangling.—**SYN.** of 'alter-

ALTERNATE—ALTO.

cation': quarrel; difference; dispute; affray or fray; broil; feud; contest; wrangle.

ALTERNATE, v. *äl-tér'nät* [L. *alternātus*, anything done by turns—from *alter*, another]: to do by turns; to happen by turns; to change in succession: **ADJ.** that succeeds or follows by turns; first on one side, then on another. **ALTER'NATING**, imp. **ALTER'NATED**, pp. **ALTER'NATELY**, ad. *-li*. **ALTER'NANT**, a. in *geol.*, in alternating layers. **ALTERNATION**, n. *äl'tér-nä'shùn*, the act of doing by turns; the act of taking one and leaving one in succession. **ALTER'NATIVE**, a. *äl'tér-nä-tiv*, offering a choice of two things. **N.** of two things, an offer to take the one and leave the other; often used, but incorrectly, of more than two. **ALTER'NATIVELY**, ad. *-li*. **ALTER'NATIVENESS**, n. **ALTERNATE ANGLES**, in *geom.*, two similar angles not adjacent, but on opposite sides of an intersecting line. **ALTERNATE GENERATION**, a mode of reproduction among the lowest animal types, in which the young do not resemble the parent, but the grand-parent. See **GENERATIONS**, **ALTERNATION OF**.

ALTERNATE, in Botany: see **LEAVES**.

ALTHÆ'A: see **MARSH MALLOWS** and **HOLLYHOCK**.

ALTHORP, LORD: see **SPENCER**, **JOHN CHARLES**, Earl.

ALTHOUGH, conj. *awl-thō'* [*all and though*]: notwithstanding; though.

ALTIMETER, n. *äl-tim'è-tér* [L. *altus*, high: Gr. *metron*, a measure]: an instrument for taking heights. **ALTIM'ETRY**, n. *-è-trì*, art of measuring heights.

ALTITUDE, n. *äl'ti-tūd* [L. *altitudo*, height, altitude—from *altus*, high.: It. *alto*]: height, as of a mountain; extension upwards; highest point. In astronomy, **A.** is the height of a heavenly body above the horizon. It is measured, not by linear distance, but by the angle which a line drawn from the eye to the heavenly body makes with the horizontal line, or by the arc of a vertical circle intercepted between the body and the horizon. Altitudes are taken in observatories by means of a telescope attached to a graduated circle (see **CIRCLE**), fixed vertically. The telescope being directed toward the body to be observed, the angle which it makes with the horizon is read on the graduated circle. The **A.** thus observed must receive various corrections—the chief being for parallax (q.v.) and refraction (q.v.)—in order to get the true **A.** At sea, the **A.** is taken by means of a sextant (q.v.), and then it has further to be corrected for the dip of the visible horizon below the true horizon. See **HORIZON**. The correct determination of altitudes is of great importance in most of the problems of astronomy and navigation. See **LONGITUDE**.

An **ALTITUDE** and **AZIMUTH INSTRUMENT** consists essentially of a vertical circle with its telescope so arranged as to be capable of being turned round horizontally to any point of the compass. It thus differs from a transit circle (q.v.), which is fixed in the meridian. See **AZIMUTH**.

ALTO, *äl'tō* (*contralto deciso*): the deepest or lowest species of musical voice in boys, in eunuchs, and best of all

ALT-OFEN—ALTON.

in females, where its beauty of tone gives it the preference. Its powers of expression are quite peculiar, and cannot be supplied by any other kind of voice. Its tone-character (timbre) is serious, spiritual, tender, and romantic. The low A. in particular has a fullness of tone combined with power in the lower range, and is admirably fitted to express religious resignation. The high A. has generally the same range of compass as the mezzo-soprano, but differs from it in the position of the cantabile and in its character of tone. A. voices generally consist of two registers, the lower beginning at F or G below middle C, and reaching as high as the A or B above the octave C. The higher notes up to the next F or G partake more of the character of the soprano. See ALT: VOICE.

ALT-OFEN, *ált-õfën*: town of Hungary, practically a suburb of Ofen or Buda (q.v.), now incorporated with Pesth as *Budapest*.

ALTOGETHER, ad. *awl'too-geth'ér* [*all and together*]: wholly; entirely.

ALTON, *awl'tôn*: city, Madison co., Ill.; on the left bank of the Mississippi river, eight m. above its confluence with the Missouri, 24 m. n. of St. Louis. It has railroad connections with Chicago and other important centres *via* the Chicago & Alton; Illinois & St. Louis; and St. Louis, Rock Island & Chicago railroads. With a fine river front of nearly 2 m., A. rises irregularly to a height of 225 ft. in its highest portion; it is drained by Piassa Creek, which flows from springs in the highlands above the city. It is very handsomely laid out, the business streets being parallel with the river, in the lower part of the city, while fine residences have been built on the slopes of the hill and on the bluff overlooking the river. The principal trade is in the farming products of the rich surrounding country, in the coal mines in the neighborhood, and in the lime and building stone which are plentiful beneath and about the city. Ferries connect the two sides of the river, and steamboats ply between A. and other towns on the Mississippi. There are four large flour mills in A., a tobacco factory, glass works, saw and planing-mills, an iron foundry, organ factory, manufactory of agricultural implements, and other industries. There are five public school-buildings. Shurtleff College, in Upper Alton, chartered 1835, is a Baptist institution of merit and popularity. There is a Rom. Cath. cathedral. There are two daily and four weekly papers, a state penitentiary, a public library, and two national banks. Pop. (1860) 6,333; (1870) 8,665; (1880) 8,978.

ALTON: town of Hampshire, Eng., near the Wey, 16 m. n.e. of Winchester. The church was erected in the reign of Henry VII., and is in the Perpendicular style. Bombazines were formerly manufactured here. Good hops are grown in the neighborhood, and there are large breweries in the town, the ale of which is much esteemed. Pop. (1871) 4,092; (1881) 4,510.

ALTON, *ál'ton*, Jos. WILHELM EDUARD D': 1772-1840:

ALTONA—ALTOONA.

b. Aquileia: Prof. Archæology and the History of Art at Bonn. In early years his attention was directed to natural history, especially that of the horse, on which he published a splendid illustrated work (*Naturgeschichte des Pferdes*, Bonn, 1810), completed in 1817. In concert with his friend Pander, he projected an extensive work on comparative osteology, of which the first division was published at Bonn 1821-28. His etchings of animals, etc., are highly esteemed. Albert, the late Prince Consort of Queen Victoria, was a pupil of A. in the history of art.

ALTONA, *äl tö-nä*: largest and richest city in the Prussian prov. of Slesvig-Holstein; on the Elbe, so near Hamburg that the two cities are divided by only the state-boundaries. A. lies higher than Hamburg, and is much healthier; but is without the numerous canals necessary for the transport of goods, with which Hamburg is well provided. Commercially, it forms one city with Hamburg. Its trade extends to England, France, the Mediterranean Sea, and the Indies. In 1882, 537 sea-going vessels entered the port. There are many important industrial establishments in A.; tobacco is largely manufactured, one factory working up 600,000 lbs. yearly. A. is a free port, and enjoys many privileges in respect of trade, and also of civil freedom; all sects are allowed free exercise of their religion. The city is connected by a railway with Kiel, Rendsburg, and Glückstadt. The observatory is a private institution, which gained a great reputation under the direction of Schumacher, who died in 1851. The rise of A. to its present importance has been recent and rapid, for a continental town. Pop. (1880) 91,047.

ALTOONA, *äl tö-nä*: city in Blair co, Penn., on the Pennsylvania railroad, at the e. base of the Alleghany Mts., here crossed by the railroad: 117 m. from Pittsburgh, 131 from Harrisburg, and abt. 235 from Philadelphia. It has importance as a great railroad centre, here being located the principal offices and the extensive machine shops of the Pennsylvania railroad company, in which locomotives and cars are manufactured, and in which over 2,000 men are employed. Besides these works, there are also extensive planing-mills and a large rolling-mill. The city was laid out in 1849, and contains 75 m. of streets, planted with shade-trees. There are water-works, owned by the city, supplying water by gravitation, and the city is lighted by gas. There is one place of amusement, and modest municipal buildings. A. is chiefly notable for the fine scenery about it, and for the many and varied natural attractions afforded to the traveller by the Pennsylvania railroad. Its elevation is 1,208 ft. above the level of the sea. The journey by rail to the summit discloses some of the most wonderful engineering achievements of the country. The 'horseshoe' curve is familiar to tourists as presenting an extraordinary railroad feature. At the top of the mountain is a tunnel more than 3,500 ft. long, through which the railroad passes. There are about 20 churches, a public library, a Rom. Cath. convent, public schools, and

ALTORF—ALTO-RILIEVO.

ten newspapers of which three are daily; there are three banks. Pop. (1860) 8,591; (1870) 10,610; (1880) 19,710.

ALTORF, *äl'torf*: chief town in the Swiss canton Uri; a sheltered spot at the base of the Grunberg, about 2 m. from the head of the Lake of the Four Cantons. It is well built, having several open places, a church, a nunnery, and the oldest Capuchin monastery in Switzerland. The little tower on which the exploits of William Tell are painted in rude frescoes is known to be older than the legend of Tell. The lime-tree under which the scene of the shooting of the apple was laid was removed in 1567, and a stone fountain erected in its stead. Situated on the St. Gothard road, A. has some transit trade, but little or no industry of its own. Pop. abt. 3,000.

ALTO-RILIEVO, n. *äl'tō-rì-lē-vō* [L. *altus*; It. *riliévo*, raised or embossed work]: term used in sculpture to designate that mode of representing objects by which they are made to project strongly and boldly from the background, without being entirely detached. In alto-rilievo, some portions of the figures usually stand quite free, and in this respect it differs from *basso-rilievo* [It. *basso*, low], or *bass-relief*, or low-relief, and from the intermediate kind of relief known as *mezzo-rilievo*, in which the figures are fully rounded, but where there are no detached portions. In order to be in high-relief, objects ought actually to project somewhat more than half their thickness, no conventional means being employed in this style to give them apparent prominence. In bass-relief, on the other hand, the figures are usually flattened; but means are adopted to prevent the projection from appearing to the eye to be less than half; because if an object be seen to project less than half, i.e. to be more than half buried in the background, it will be obvious that its true outline or profile cannot be represented. This rule, that in all reliefs

there shall be either a real or an apparent projection of at least half the thickness of round objects, was strictly observed in the best period of Greek art, but has been often neglected in the execution of reliefs in later times, and hence some attempts at foreshortening and perspective have partially failed.



Winged Bull.

Relief forms an intermediate stage between plastic art and

painting, the mode of representation being borrowed from the former, while the mode of arrangement is to some extent from

ALTO-RILIEVO.

the latter. The plastic principle occupies the most prominent place in the simple and tranquil reliefs of the earlier art of Greece, whereas the pictorial principle preponderates in the crowded and often excited scenes represented in the later Roman reliefs. In reliefs produced in modern times, the one element or the other has prevailed, according as the one model or the other has been followed. The works recovered from the ruins of Persepolis, Nineveh, and Babylon still attest the extensive employment of relief in Persian and Assyrian art. Of the latter, which usually belongs to the class of *mezzo-rilievo*, some of the finest specimens in existence are now to be seen in the British Museum. Though never exhibiting the life and freedom of classical or modern European art, the elaborately executed and majestic reliefs of these semi-oriental nations are greatly in advance not only of the whimsical distortions of nature exhibited by the Hindus, but of the inanimate and motionless representations of the Egyptians.

The earliest Greek reliefs possessed a hard and severe character, somewhat approaching to the art of those earlier nations of which we have just spoken, and were very slightly raised. Of this an instance is in the two lions over the gate at Mycenæ—probably the oldest Greek relief in existence. It was Phidias who gave to relief its true character, and finally brought it to a degree of perfection which it has never since attained. The *alti-rilievi* which adorned the metopes of the Parthenon at Athens, and the Temple of Apollo at Phigalia in Arcadia, now preserved in the British Museum, are still not only unsurpassed, but unapproached as examples of the style. In none of these do we see any attempt at perspective, and even foreshortening for the most part is avoided.

Under the Romans, sculpture was employed to an enormous extent in the decoration of tombs and sarcophagi, whole streets of such monuments being constructed, as, for example, on the Appian Way. The result of the demand thus created was, that sculpture became a manufacture rather than an art, and attempts were made to supply by technical execution and mere mass what had been lost in thought and spirit. Relief was applied, often by Greek artists resident in Italy, to purposes for which the Greeks, in their own land and in their better times, had rightly deemed it unsuited. Behind figures standing nearly free, a second rank was introduced, and those numerous examples of a false style, still to be found in every gallery in Europe, were produced, the imitation of which afterwards led to such a lavish expenditure of artistic talent in Italy. The attempt which the Romans had made to invade the province of painting, by means of sculpture, was carried still further by the Florentine artists of the 16th and 17th c. Not only were several rows of figures represented in perspective, but even landscape was introduced with a success which, in the hands of such artists as Ghiberti, was positively marvellous. If the highest perfection in the true plastic style of relief was attained by Phidias in the metopes of the Parthenon at Athens, a corresponding merit may be

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claimed as regards the degenerate pictorial style by Ghiberti in the celebrated bronze doors of the Baptistery of San Giovanni at Florence. Even Canova's reliefs partook to far too great an extent of the character of paintings in stone; and to Flaxman, and above all, to Thorwaldsen, must be assigned the merit of restoring this style of art to its genuine and original principles. It is to be remembered, in



Panathenaic Frieze.—From the Parthenon.

studying the reliefs of classical times, that, studiously as the Greeks avoided a pictorial conception of their subject, they did not eschew the use of color where it could be employed to heighten the effect of their reliefs. There is reason to believe that in many excellent examples the background was painted blue, and that the hems of the garments of the figures, and the like, were often colored or gilded.

ALTRINGHAM, *ăl'tring-am*: market town of Cheshire, England, on Bowden Downs, 8 m. s.w. from Manchester, on the Cheshire Midland railway, and near the Duke of Bridgewater's canal, which has contributed greatly to its prosperity. It is a very neat and clean town, and on account of the salubrity of the air is much resorted to by invalids from Manchester. It has manufactures of artificial manures, and an iron foundry, but a chief employment of its inhabitants is the raising of fruits and vegetables for the market of Manchester. Pop. (1871) 8,478; (1881) 11,249.

ALTRUISM, *n. äl'tró-izm* [It. *altrúi*, other persons, other: L. *alter*, another, the other]: the state of being regardful of the interests and good of others; the carrying out the principles of the golden rule; the opposite of egoism; benevolence. **AL'TRUIS TIC**, *a. is'tik*, regardful of the interests and good of others; the opposite of egoistic; beneficent; benevolent.

ALUM, *n. äl'üm* [L. *alūmen*, alum; Gr. (*h*)*a's*, salt]: a white saline substance used in medicine and dyeing; a double sulphate of potash and alumina; in *chem.*, several

ALUM.

other salts of similar constitution are also called *alums*. **ALUMED**, a. *ālūmd*, imbued or mixed with alum. **ALUMINA**, n. *ā-lō mī-nā*, or **ALUMINE**, n. *-mīn*, the clay, loam, or other substance from which alum is obtained; *pure alumina* consists of oxygen and the new metal now called *aluminium*. **ALUMINIFORM**, a. *ālō-mīn i-faerm* [*L. alūmen, forma*, shape]: formed like alumina. **ALUMINIFEROUS**, a. *ālō-mīn-i-fēr-ūs* [*L. alūmen, fero*, I produce]: containing alum. **ALUMINOUS**, a. of or relating to alum. **ALUMINITE**, n. *ā-lō mī nīt*, a mineral of a silver or yellowish white color. **ALUMINUM**, n. *ālō mī-nūm*, or **ALUMINIUM**, n. *ālō-mīn'i-ūm*, the metallic base of alumina—as a metal, now manufactured to a considerable extent. **ALUM-ROOT**, two different species of American plants possessing astringent properties. **ALUM-STONE**, a mineral of a white, grayish, or reddish color, from which much of the best alum is procured.

ALUM: a whitish, astringent, saline substance; properly a double salt, composed of sulphate of potash and sulphate of alumina, which, with a certain proportion of water, crystallize together in octahedrons or in cubes. Its formula is $\text{KOSO} + \text{Al}_2\text{O}_3\text{SO}_4 + 24\text{HO}$. A. is soluble in eighteen times its weight of cold water, and in its own weight of hot water. The solution thus obtained has a peculiar astringent taste, and is strongly acid to colored test-papers. When heated, the crystals melt in their water of crystallization; and when the water is completely driven off by heat, there is left a spongy white mass, called burnt A. or anhydrous A. A. is much used as a mordant in dyeing. This property it owes to the alumina in it, which has a strong attraction for textile tissues, and also for coloring matters; the alumina thus becomes the means of fixing the color in the cloth. The manufacture of the colors or paints called lakes depends on this property of alumina to attach to itself certain coloring matters. Thus, if a solution of A. is colored with cochineal or madder, and ammonia or carbonate of soda is added, the alumina of the A. is precipitated with the color attached to it, and the liquid is left colorless. Alumina, the basis of pure clay—which is a silicate of alumina—derives its name from being first extracted from A. A. is also used in the preparation of leather from skins, and, in medicine, as a powerful astringent for arresting bleeding and mucous discharges. Its use in the making of bread, to give a white appearance and more pleasing consistence to bread made from indifferent flour, is highly objectionable. A. rarely occurs in nature, except in a few springs and in some extinct volcanoes, where it appears to be formed from the action of sulphurous acid vapors upon feldspathic rocks. In Britain it is prepared artificially from A.-shale, obtained from coal-mines at Hurlett and Campsie, near Glasgow; and alum-slate, which occurs at Whitby, in Yorkshire, and there forms precipitous cliffs, extending about 30 m. along the e. coast of England. The alum-slate, shale, or schist, consists mainly of clay (silicate of alumina), iron pyrites (bisulphuret of iron), and coaly or bituminous matter. When the shale is exposed to the air—as it is in the old *coal-trastes* or mines

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from which the coal has been extracted—the oxygen of the air, assisted by moisture, effects a decided change upon it. The original hard stony substance begins to split up into thin leaves, and becomes studded over and interspersed with crystals. The latter are the result of the oxidation of the sulphur of the pyrites into sulphuric acid, and the iron into oxide of iron, both of which in part combine to form sulphate of iron, while the excess of the sulphuric acid unites with the alumina of the clay, and produces sulphate of alumina. When the alum-shale thus weathered is digested in water, there dissolve out the sulphate of alumina ($\text{Al}_2\text{O}_3 \cdot 3\text{SO}_3$) and sulphate of iron (FeOSO_4); this solution is treated with chloride of potassium (KCl), which decomposes the sulphate of iron, forming sulphate of potash (KOSO_4), and chloride of iron (FeCl). When this liquid is evaporated to concentration, and allowed to cool, crystals of A. separate, consisting of sulphate of alumina, sulphate of potash, and water, thus, $\text{KOSO}_4 + \text{Al}_2\text{O}_3 \cdot 3\text{SO}_3 + 24\text{HO}$, and the chloride of iron is left in the solution or *mother-liquor*. The crystals of A. obtained from the first crystallization are not free from iron, and hence require to be redissolved in water, reconcentrated, and recrystallized. This operation is usually repeated a third time before the A. is obtained pure.—As the preliminary weathering of the shale requires some years, a more expeditious method is now largely resorted to. The shale is broken in fragments, and piled up over brushwood in long ridges, shaped like huge potato-pits, and the brushwood being set fire to, the coaly matter of the shale begins to burn, and the whole ridge undergoes the process of roasting; the results of which are the same as that of the weathering operation—namely, the oxidation of the sulphur and iron, and the formation of sulphate of alumina and sulphate of iron. This material is afterwards worked up as previously described. The roasting operation reduces the weathering process from years to months. The A. made at Tolfa, near Civita Vecchia, is extracted from alum-stone, a mineral containing sulphate of potash and sulphate of alumina, but united in such a form as to render them insoluble. When the mineral is calcined the sulphates become soluble, and are extracted by lixiviation. The A. thus manufactured is prized, as being free of iron. The potash in A. can be replaced partly or altogether by soda or ammonia; the alumina by oxide of chromium or sesquioxide of manganese; or the sulphuric acid by chromic acid or peroxide of iron, without altering the form of the crystals. There are thus soda, ammonia, chrome, etc., alums, forming a genus of salts of which common A. is only one of the species. The more important members of the class, expressed in symbols, are:

$\text{KOSO}_4 + \text{Al}_2\text{O}_3 \cdot 3\text{SO}_3 + 24\text{HO}$, potash A.
 $\text{NaOSO}_4 + \text{Al}_2\text{O}_3 \cdot 3\text{SO}_3 + 24\text{HO}$, soda A.
 $\text{NH}_4\text{OSO}_4 + \text{Al}_2\text{O}_3 \cdot 3\text{SO}_3 + 24\text{HO}$: ammonia A.
 $\text{KOSO}_4 + \text{Cr}_2\text{O}_3 \cdot 3\text{SO}_3 + 24\text{HO}$, chromic potash A.
 $\text{FeOSO}_4 + \text{Al}_2\text{O}_3 \cdot 3\text{SO}_3 + 24\text{HO}$, ferrous A.

ALUM BAGH, *-bāg* ['Garden of the Lady Alum, or Beauty of the Soul']: a domain about 4 m. from the city of

ALUMINA.

Lucknow, India, near the Cawnpore road. It comprised several buildings, including a palace, a mosque, and an *am-barra* or private temple, bounded by a beautiful garden, in the middle of a park, and the park enclosed by a wall with corner towers. In 1857, it was converted by the rebels into a fort. In Sept., Outram, Havelock, and Neill crossed the Ganges from Cawnpore, marched rapidly towards Lucknow, and captured the A. B. on the way. About 300 soldiers were left at the place, with four guns, a number of sick, wounded, and 4,000 native camp-followers, under Col. M'Intyre; while the three generals proceeded with their main force to Lucknow, where for two months they were shut in by the rebel hordes. At the end of Nov., Sir Colin Campbell relieved both Lucknow and the A. B., leaving Sir James Outram, with 3,500 men, to hold the A. B., then the only spot in the whole province of Oude in the hands of the British. Sir James was attacked, 1858, Jan. 12, by an armed rabble of 30,000 men. These he completely defeated. They attacked him again with 20,000 men, Feb. 21, when his small force was weakened by the absence of a detachment; and were again effectually repulsed. In the next month, Sir Colin Campbell reconquered Lucknow, and relieved the garrison at the A. B.

ALUMINA, *â lû mî-nâ*: the most abundant of the earths (q.v.); the oxide of the metal aluminium (q.v.), the formula being Al_2O_3 . It occurs in nature abundantly in combination with silica, associated with other bases. The most familiar of its native compounds is felspar, a silicate of A. and potass ($Al_2O_3, 3SiO_2 + KO, SiO_2$). This is one of the constituents of granite, and of several other igneous rocks. Certain varieties of these, by exposure to the atmosphere, become completely disintegrated, passing from the state of hard, solid rock, such as we are accustomed to see in building granite, into soft, crumbling, earthy masses. It is the felspar which undergoes the change; and it appears to be owing to the action of rain-water charged with carbonic acid, which dissolves the potass and some of the silica of the felspar, leaving the excess of silica and the A. still united. It is not known, however, why certain specimens of granite are rapidly corroded and crumbled down, while others have for ages resisted the same causes of decay. By such disintegration the clays of arable soils are produced. Clay consists of silica and A. in a state of chemical combination. It never is pure A., but the quantity of silica united to the latter is variable. When it is pure, clay is quite white, as we see in the porcelain clay of Devonshire and Cornwall, derived from colorless felspar. More frequently clay is red, owing to the presence of oxide of iron; or black, from the diffusion through it of vegetable matter.

From alum, A. is prepared by adding to a solution of the former water of ammonia, as long as it occasions a precipitate. The A. appears as a voluminous, white, gelatinous substance, consisting of the oxide of the metal combined with water. When A. is precipitated from a solution containing coloring matter, such as logwood, etc., it carries down the color chemically united to the flocculent precipi-

ALUMINIUM.

tate; in this way are formed the colored earths, called *lakes* (q.v.). A. in the state of precipitate, after being gently dried, is readily soluble in acids and in alkalies; but if heated to whiteness it loses the associated water, contracts greatly in bulk, and forms a white, soft powder, not at all gritty, and with difficulty soluble in alkalies and acids. A., as generally prepared, whether hydrated or anhydrous, is insoluble in water, possesses no taste, and does not alter coloring matters; but some time ago Mr. Walter Crum obtained A. in an allotropic form, in which it is soluble in water. It is quite different, therefore, in properties from the alkaline earths, and is a much weaker base. In the anhydrous state it absorbs water with great readiness without combining with it, so that it adheres to the tongue, and is felt to parch it. Clay retains this property; and the ends of tobacco-pipes are glazed, to prevent adhesion to the lips or tongue. A. is not fusible by a forge or furnace heat, but it melts before the oxyhydrogen blow-pipe into a clear globule, possessing great hardness. It occurs in nature in a similar state. The more coarsely crystallized specimens form the emery which is used for polishing; the transparent crystals, when of a blue color, owing to a trace of metallic oxide, constitute the precious gem, the sapphire, and, when red, the ruby. A., in common with other sesquioxides, is a feeble base. The salts it forms with the acids have almost all a sour taste, and an acid action on coloring matter.

ALUMINIUM, *al'ô-min'i-um*—sym. Al, eq. (old) 13·7, (new) 27·4: one of the metals present in clay, granite, and other rocky and earthy substances. It was discovered by Wöhler in 1828, and was re-examined by him in 1846, when he obtained the metal in minute globules or beads, by heating a mixture of chloride of A. and sodium. In 1855, the French chemist Deville showed, as the result of a series of experiments, that A. could be prepared on a large scale and in a compact form without much difficulty. The mineral cryolite found in Greenland, which is a double fluoride of A. and sodium, was the ore first used for its manufacture; but bauxite, a mineral found in France, and consisting chiefly of alumina, or oxide of A. and oxide of iron, has more recently been employed as a convenient source of the metal. An aluminate of soda is first obtained by heating the bauxite with soda ash in a furnace, and separating it (the aluminate) from the insoluble portions by lixiviation. When carbonic acid is added to the solution, pure alumina is thrown down. The alumina is then formed into balls with common salt and charcoal, which are heated in an earthenware retort through which chlorine gas is passed. In this part of the process the charcoal combines with the oxygen, and the chlorine with the A.; the latter sublimes over with the common salt (chloride of sodium), and is collected as a double chloride of A. and sodium. When this double chloride is heated in a reverberatory furnace with fluxes and metallic sodium, the latter seizes the chlorine combined with the A., which is then set free, and falls to the bottom ready to be cast into ingots for use. The metal is manufactured chiefly in France.

ALUMNUS—ALUM ROOT.

The properties of A. are, that it is a white metal, somewhat resembling silver, but possessing a bluish hue, which reminds one of zinc. It is very malleable and ductile, in tenacity it approaches iron, and it takes a high polish. When heated in a furnace it fuses, and can then be cast in molds into ingots. Exposed to dry or moist air, it is unalterable, and does not oxidize as lead and zinc do. Cold water has certainly no action upon it, and in the majority of experiments hot water has not sensibly affected it. Sulphuretted hydrogen, the gas which so readily tarnishes the silver in households, forming a black film on the surface, does not act on A., which is found to preserve its appearance under all ordinary circumstances as perfectly as gold. When fused and cast into molds, it is a soft metal like pure silver, and has a density of 2.56; but when hammered or rolled, it becomes as hard as iron, and its density increases to 2.67. It is therefore a very light metal, being lighter than glass, and only one fourth as heavy as silver. This property was taken advantage of by Napoleon III., who ordered the eagles surmounting the standards of the French army to be made of A. instead of silver; and thus the same-sized eagle was reduced to one fourth of its former weight. A. is very sonorous, and when a rod or small bell made of it is struck, it gives out a very sweet, clear ringing sound. A. forms, with copper, several light, very hard, white alloys; also a yellow alloy, which, though much lighter than gold, is very similar to it in color. This gold-like alloy, which contains from 5 to 10 per cent of A., and is of great strength, was discovered by Dr. Percy of London, and has hitherto been much more used for manufacturing purposes than A. alone. It is much used for watch chains, pencil-cases, and other ornamental articles. By itself A. is used for jewelry, small statuettes, and other works of art. It is also employed for the tubes of opera-glasses. Its bluish color can be whitened by hydrofluoric and phosphoric acids, and also by a heated solution of potash. Considering its valuable properties, this metal has not received such extensive application in the arts as might have been expected.

After experimenting for 30 years, Mr. Webster (near Birmingham) has discovered a method of making A. at one-tenth of its former cost, which is now a commercial success. Alum and pitch are calcined together, and the resulting cinder, after further processes, yields a substance containing nearly 90 per cent of alumina. This method takes much shorter time than the other (a week instead of six months), and produces vastly larger quantities. Some of the by-products are valuable, as a yellow liquor, which gives a fine blue dye.

ALUMNUS, n. *ă-lŭm'nŭs* [L. *alumnus*, a pupil—from *alĕrĕ*, to nourish]: a pupil or scholar of a school or university.

ALUM ROOT: name of two plants, natives of the United States, very different from each other, but agreeing in the remarkable astringency of their roots, which are medicinally used. One of these plants is *Geranium maculatum*. See

ALUNITE—ALURED.

GERANIUM. The root contains more tannin than kino (q. v.) does. The tincture is of use in sore-throat and ulcerations of the mouth, and is also administered in various diseases.—The property of astringency belongs, in an inferior degree, to some other species of *Geranium*, and of the kindred genera, *Erodium* and *Pelargonium*.—The other American plant to which the name A. R. is given is *Heuchera Americana*, a plant of the natural order *Saxifragæ* (q. v.), an order in which also astringency is a prevalent property. The genus *Heuchera* has the calyx 5-cleft, the petals undivided, five stamens, and the styles remarkably long. *H. Americana* is everywhere covered with a clammy down; the leaves are roundish, lobed, and toothed; the peduncles dichotomous and straggling. The root is a powerful styptic, and is used to form a wash for wounds and obstinate ulcers.

ALUNITE, *âl'oon-ît* [F. *alun*, alum]: alum-stone; a mineral containing alum, found in minute shining crystals of a white, grayish, or reddish color. **ALUNOGENE**, *n. â loon'ô-jên* [F. *alun*; Gr. *gennâō*, I produce]: an ore of alumina, known as *hair-salt* or *feather-alum*—is a frequent efflorescence on the walls of quarries or mines.

ALUNNO, *â-lôn'no*, **NICCOLO**, or Niccolo of Fuligno: b. about 1480, Fuligno: one of the earliest of the old Umbrian painters. Some of his pictures were carried off by the French; one, *The Agony in the Garden*, remains in the Louvre. There is also a *Madonna between Two Angels* (1499), to be seen in the parish church of the village of Bastia. Fragments are in existence of an altar-piece for the cathedral of Assisi. The picture represented a *Pieta*, with two angels bearing torches, and, according to Vasari, weeping so naturally, that 'no one could have painted them better.' A. is not so remarkable for the originality or fertility of his invention, as for his selection of details, warmth of feeling, purity, and devout faith. His earnestness, however, leads him at times into exaggeration.

ALURED, i. e., *Al'vred*, or **ALRED**, of Beverley, Yorkshire: d. 1128 or 29: old English historian of the time of Henry I. Little is known regarding him; but he is said to have been educated at Cambridge, and to have greatly distinguished himself by the variety of his learning. It is also stated that he had enriched his mind by travel, both in France and Italy, and that at Rome he became domestic chaplain to cardinal Othoboni. His permanent office, however, appears to have been that of canon and treasurer of the church of St. John in his native town of Beverley, where he wrote his *Annals*. This work commences with a fabulous period of British history, and extends down to the 29th year of Henry I. It was published at Oxford, 1716, by Thomas Hearne, and is remarkable for various reasons. Its Latin is extremely good, and even elegant, while its accuracy, especially in dates, is unusual for the age in which its author lived. He is said, though it is very doubtful, to have written, besides the *Annals*, a work on the liberties or privileges of the church of St. John of Beverley. The work, whoever wrote it, is a translation of old Saxon docu-

ALVA—ALVARADO.

ments, charters, etc., relative to that edifice, and is still a manuscript. A. died in 1128 or 1129.

ALVA, *ál'va*: village of Stirlingshire, Scotland, 7 m. n.e. from Stirling. The part of Stirlingshire in which A. is situated is detached from the rest of the county, and enclosed between the counties of Clackmannan and Perth. A. is a place of great industrial activity, having extensive woollen factories, in which the manufacture of shawls and tweeds has superseded the old trade in blankets. The number of looms employed is about 1,100. To the e. of the village is a glen named the Silver Glen, where two pits are still to be seen, marking the site of old silver-mines. The communion cups still in use in the parish church are made of silver derived from these mines. Immediately behind the village is Alva Glen, noted for its picturesque beauty and magnificent waterfall. About a mile to the w. of the village is Balquharn Glen, also a very romantic spot. Pop. (1861) 8,147; (1871) 4,096; (1881) 4,961.

ALVA, DUKE OF: see **ALBA**.

ALVARADO, *ál-vá-rá-dō*: t. of Mexico, dept. of Vera Cruz, on the Gulf of Mexico, at the mouth of the river Alvarado, 50 m. s.e. from Vera Cruz. The situation close to a lagoon is unhealthy. A bar at the mouth of the river prevents the entrance of vessels of more than 12 or 18 ft. draught, but within the bar the harbor is sheltered from every wind. Great part of the town consists of cane-built cottages, roofed with palm-leaves. The river has a course of not much more than 100 m., but collects the waters of an extensive swampy district. Much rice and cacao are produced in the country around Alvarado. Pop. 6,000.

ALVARADO, *ál-vá-rá-dō*, PEDRO DE, a famous companion of Cortes; b. Badajoz in Spanish Estremadura, towards the close of the 15th c.; d. 1541. In 1517 or 18, he sailed for the new world, and in the same year was despatched from Cuba, by Velasquez, the governor of that island, to explore, under the command of Grijalva, the shores of the American continent. The expedition touched at Acozamil (the Isle of Swallows), and at various places in Yucatan. Ascending also the rivers Tabasco and Banderos, Grijalva was so enchanted with the beauty of the country, its fine cultivation, and the numerous traces of advanced civilization, that he named it *New Spain*. Now, for the first time, the Spaniards heard of the riches of Montezuma, and of his vast empire. A. was ordered to return to Cuba and inform Velasquez of the result of the expedition. The sight of the gold which A. brought with him stimulated the covetousness and ambition of Velasquez, who became greatly incensed against Grijalva, because the latter had not penetrated further into the new region, and on his return to Cuba deprived him of his command. In 1519, Feb., Cortes sailed from Havana, solely for the purpose of conquest, with 11 ships, containing 508 soldiers, and 100 seamen. A. commanded one of these ships; but a storm separating the fleet, he arrived at the rendezvous, Isle of Swallows, three days earlier than the others. Here the con-

ALVAREZ.

quest of Mexico was planned by these intrepid adventurers. A. figured in every conspicuous incident; he was, indeed, hardly less distinguished than the sagacious Cortes himself, who knew his worth, and whom he served with unfaltering zeal and fidelity. While he held the city of Mexico, during the absence of his chief, he massacred in the midst of a fête a great number of Aztec nobles, which act is said to have excited the indignation of Cortes; but, on the other hand, it is asserted that the Mexicans had plotted the destruction of the Spaniards, and that A. had become cognizant of the scheme. In the famous night retreat of 1520, July 1, A. commanded the rear-guard. After the conquest of Mexico, he was sent, 1523, at the head of 300 foot, 160 horse, with 4 pieces of cannon, and a troop of Mexican auxiliaries, to subdue the tribes on the coast of the Pacific in the direction of Guatemala. He was completely successful, receiving everywhere the submission of the native chiefs, while the people brought him presents, in token of friendship. He now returned to Spain, where the emperor Charles V. gave him a splendid reception, and appointed him governor of Guatemala. On departing again for the new world he was accompanied by numerous friends and cavaliers desirous of making their fortune. His adventurous spirit soon launched him into new enterprises. Pizarro and Almagro were prosecuting a brilliant career of conquest in S. Amer. A. resolved not to intrude upon their territories. He considered the province of Quito to be without the limits of these, and so, embarking with a force of 500 soldiers, 227 of whom were cavaliers, he landed at Bahia de los Carraques, near Cape San Francisco, whence he penetrated into the heart of the country, crossing the Andes by as bold and hazardous a march as it is possible to conceive. In the plain of Rio Bamba he was met by some of the troops of Pizarro, headed by Almagro; but instead of disputing by force of arms his right to the possession of the country in which he found himself, he agreed to retire, on receiving an indemnity for his arduous undertaking. He therefore retired to Honduras, and aided the colonists in establishing new settlements, among others, Gracias-a-Dios and San Juan de Puerto de Caballos. Meanwhile, Pizarro, loaded with wealth, went back to Spain in 1534, and misrepresented the conduct of A. to the emperor; but the latter following, vindicated himself so successfully, that he received the government of Honduras in addition to Guatemala. Again he embarked for the new world, and pursued his course of discovery and conquest; but in an affray with the Indians upon the coast of Michoacan, 1541, he was accidentally killed by his horse falling upon him and crushing him. In the same year, an inundation, accompanied by a frightful tempest, overthrew the walls of the town of San Jago, when his wife and children all perished.

ALVAREZ, *ál'vá rěz*, DON JOSE: 1768, Apr. 23—1827, Nov. 26; b. Priego, prov. of Cordova, Spain: Spanish sculptor. During youth he labored with his father, a stone-mason, and when 20 years old began to study drawing and sculpture in the academy at Granada. His early essays in sculpture

ALVEARY—ALWUR.

secured for him the patronage of the bishop of Cordova, and in 1794 he was received into the acad. of San Fernando, where, 1799, he gained the first prize in the first class. Subsequently, he gained the second prize for sculpture in the Institute of Paris, and in 1804 increased his celebrity by a plaster-model of Ganymede, which proved him a rival of Canova in gracefulness of style. He then attempted greater works in the more severe style, and prepared a model for a wounded Achilles, which was accidentally broken. Having removed to Rome he was employed by Napoleon to design bass-reliefs for the Quirinal Palace on Monte Cavallo; but, on account of political changes, his works were not allowed to occupy the places for which they had been destined. In Rome, where he lived on terms of friendship with Canova and Thorwaldsen, he executed, among other works, his *Grupo Colosal de Zaragoza*, now in the Royal Museum of Madrid, representing a scene in the defence of Saragossa. This work alone is sufficient to establish A.'s fame. Clearness of design, dignified simplicity in execution, truthfulness to nature, and deep sentiment, mark the sculptures of A., who, next to nature and classical antiquity, studied the works of Michael Angelo. He d. Madrid.

ALVEARY, n. *āl'vī-ēr'ī* [L. *alvĕrĭum*, a beehive—from *alvus*, the belly]: in *anat.*, the hollow of the external ear. **ALVEOLAR**, a. *āl-vē'ō-lēr*, or **ALVEOLAR'Y**, a. *-lēr'ī*, containing sockets. **ALVEOLATE**, a. *-lāt*, divided into cells or pits; honeycombed. **ALVEOLÆ**, n. plu. *āl-vē'ō-lē*, sockets or cells. **ALVEOLE**, n. *āl'vī-ōl*, the socket of a tooth. **ALVEOLUS**, n. *āl-vē'ō-lūs* [L. *alvĕolus*, a small hollow or cavity—from *alvus*, the belly]: in *nat. hist.*, a little trough or hollow channel. **ALVEOLI**, n. plu. *-ō-lī*, the cavities of jawbones in which the teeth are fixed. **ALVEOLITES**, n. plu. *āl-vē'ō-līts* [Gr. *lithos*, a stone]: a genus of corals composed of concentrically-arranged tables of short tubes, angular without, and rounded within. **ALVEUS**, n. *āl-vē'ūs* [L. *alvĕus*, a hollow, a river-bed]: the bed or channel of a stream; in *anat.*, a tube or canal for a fluid of the body—e.g., alveolar process. **ALVINE**, a. *āl'vīn*, of or from the bowels.

ALWAYS, ad. *awl'wāz* [AS. *ealle wæga*, the whole way]: continually; forever; also **ALWAY**, ad. *awl'wā*, chiefly used in poetry.

ALWUR, *al'wur*, or **MACHERY**, *ma-she'rī*: a Rajpoot state of India, under the control of the governor-general's agent for the states of Rajpootana, but having a considerable measure of independence: between n. lat. 27° 14'—28° 18, and e. long. 76° 14'—77° 15': about 3,000 sq. m. The cap., Alwur, is a small ill-built town, surrounded by a wretched mud wall, at the base of a rocky range of quartz and slate, 1,200 ft. above the adjacent country, and at least 2,100 ft. above the sea, 94 m. w.n.w. from Agra. The palace of the Rao Rajah is a curious square building, having its walls pierced with a great number of small windows, and covered with glaring and grotesque paintings. The revenue of the Rao Rajah is estimated at about £180,000. The military force

AM—AMADIS.

of the state amounts to about 3,000 infantry and 4,000 cavalry. The inhabitants, who are called Mewattis, are a rude and savage race. In former times the Mewattis were a predatory tribe, and from the 13th to the 15th c. carried their raids even to the gates of Delhi. Pop. (1881) 682,926.

AM, v. *ām* [Mæso-Gothic *im*: Icel. *em*: AS. *eom*: Gr. *eimi*]: 1st sing. present tense of the verb *be*. I **AM**, one of God's titles.

AMADEUS, *am-a-dē'us* [i.e., Love-God]: a common name in the house of Savoy. The first who bore it was Count A., eldest son of Count Humbert, about the commencement of the 11th c. His successors gradually enlarged their paternal dominions; but the first to make an important figure in history was A. V., 1249–1323, who succeeded his uncle Filippo in 1285. He acquired the dignity of a prince of the empire. He had a brother who resided long in England, and while there, built the Savoy Palace in London.

A. VI., the 'Green Count,' son of A. V., 1334–83; succeeded his father in 1343. He was a sagacious, moderate, and vigorous ruler, won various places from the Dauphin of France, became lord-paramount of Piedmont, and through the favor of the emperor Charles IV. obtained the viceregency over a great part of Upper Italy. His influence among the Italian states was very great.

A. VIII., 1383–1451, was at first under the guardianship of his grandmother, a woman of superior talents; but in 1398 he assumed the reins of government, ruling with moderation, and yet with love of order. The zeal with which he aided the policy of the emperor Sigismund secured him the imperial favor, and the elevation of Savoy into a duchy (1416). On the extinction of its native dynasty, in 1418, Piedmont chose him for its ruler, as he was next of kin. But a religious melancholy took possession of his mind, and, 1434, Nov. 7, he laid down his authority, and with six of his knights betook himself to a monastic hermitage which he had built on the shores of the Lake of Geneva. He was elected pope in 1439, and assumed the name of Felix V.; but he resigned the papal chair in 1448, and died three years afterward at Geneva.

A. IX. (died 1472), after governing for four years, handed over his authority to his wife Jolante, on account of ill-health; but she used it very imprudently. While he lived, A. was a mere tool in the hands of grasping factions.

AMADEUS I., **AMADEO FERDINANDO MARIA**, King of Spain, Duke of Aosta: b. 1845, May 30; second son of Victor Emanuel, king of Italy, was elected king of Spain, 1870, Dec. 4, and abdicated the throne, 1873, Feb. 11, returning to Italy.

AMADIS, *ām'a-dīs*: a much used heroic name in chivalric poetry. At the head of those heroes of romance, stands A. of Gaul, called the Lion Knight, from the device on his shield, and also Beltenebros, or the Darkly Beautiful. The other Amadis's that figure in romance are represented as descendants more or less remote of A. of Gaul. He him-

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self was what the Germans call a love-child of the fabulous King Perion of France and of Elisena, a princess of Bretagne. The relationship of several of the other Amadis to the princes and princesses of Colchis, Trebisonde, Greece, and Cathay, that figure as their parents, is of the same unsanctioned kind. The romance which narrates the adventures of A. of Gaul is both the most ancient and the best of all the A. romances. It found favor even in the sight of Cervantes, who won immortal honor by overthrowing the long usurped dominion of this 'evil sect.' This one, however, has maintained its reputation even to the present day, not only because it was regarded by him as a literary curiosity, but also from its own merits, as the original production of a creative fancy.

The question which was early raised, and cannot yet be demonstratively settled, as to whether this romance was originally a Portuguese, a Spanish, or a French production, proves at least the absence in it of all national peculiarities, and the lack of all national traditions connected with it; and hence the want also of a living historical background, which, in the case of all really national legends, is discernible through the purely epic structure. It may be asserted with certainty, both from internal and external evidence, that this romance is the pure subjective creation of the fancy of a single individual; and that it was composed at a time when the genuine epic style of chivalric writing was near its decline, consequently not earlier than the 14th c. It is also apparent that this romance must have been originally written in prose, and intended to be read, and not to be recited. Lastly, it is not to be doubted that the author was well acquainted with the earlier legendary poetry, and has imitated it in many things, but has nevertheless struck out for himself an entirely new path, in an opposite direction, which naturally tended to lead his less gifted imitators into a bottomless abyss, and at last brought about the extinction of the whole class. For these chivalric romances—doubtless, unintentionally—became by degrees more and more of an ironical cast; and only a genius like Cervantes was wanting in order to complete their extinction, by making the comic element the fundamental tone, and exaggerating the incongruity inherent in such compositions.

The Spanish A. romances consist of fourteen books, of which the first four contain the history of A. of Gaul. Yet, according to the researches of the learned Clemencin, stated in his *Commentary on Don Quixote* (Madrid, 1883), it can scarcely be doubted that this most ancient part was originally written in the Portuguese language, by the knight Vasco de Lobeira of Oporto (d. 1403); and that it must have been composed between 1342 and 1367. The original manuscript is said to have been in the possession first of the Infant Alfonso of Portugal, son of John I., the founder of the house of Braganza (d. 1461); and last in that of the Duke of Aveiro, and to have been destroyed during the earthquake in Lisbon, 1755. At least, these first four books have been preserved only in the Spanish translation which was made by Garcia Ordoñez de

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Montalvo, about 1460, and was first printed between 1492 and 1505. The same Montalvo added to it the fifth book, *Las Sergas* [ergas, i.e., actions or deeds] *de Esplandian, Hijo de Amadis de Gaula*. He began this book in 1485, but did not complete it till 1492. The books from the 6th to the 14th contain the Exploits and Adventures of Florisando, by Paez de Ribera; of Lisuarte of Greece, and of Perion of Gaul, by Juan Diaz; of A. of Greece, of Florisel of Nicea, and of Anaxarte, by Feliciano de Silva; of Rogel of Greece, and of Silves de la Selva, by the same; of Lepolemo, and of Leandro the Fair, by Pedro de Lujan; and lastly, of Penelva, by an anonymous Portuguese. The French translators and continuators, beginning with Nicholas de Herberay, Sieur des Essarts, who published the first eight books, 1540-48, have increased this series of romances to twenty-four books. Gilbert Saunier, Sieur de Duverdier, has written a conclusion, in seven large volumes, to all the adventures begun in the whole series of legends, which he has called *Le Roman des Romans*.

How popular and widely circulated these romances were in their day may be proved by the many editions of single legends, by the translations of most of them into Italian, English, German, and even into Dutch, and also by the numerous chivalric romances written in imitation of them. As, nevertheless, a change came over the public taste, they almost all fell into oblivion, and indeed justly so, because of their want of intrinsic merit. They were transferred from the Temple of the Muses to the literary lumber-room, where now at best they only serve to feast the eyes of bibliomaniacs. A. of Gaul has been deservedly excepted from this fate, and has not only found readers in the present day, but has been in modern times translated, revised, and imitated. The Portuguese Gil Vicente, and the Spaniard Andrés Rei de Artieda, extracted from it the materials for two Spanish comedies. De Lubert and Count Tressan revived this romance in tasteful extracts; and as Bernardo Tasso formerly did in his *Amadigi*, so now Creuzé de Lesser and William Stewart Rose have extracted from it the materials for epic poems: *A. de Gaule, Poème faisant suite aux Chevaliers de la Table ronde* (Paris, 1813), and *A. of Gaul*, a poem in three books (Lond. 1803). On the other hand, Wieland's *Neuer A.* has nothing in common with the more ancient Amadis, except the title. See Baret, *De l'Amadis de Gaule* (Par. 1873).

AMADOU, n. *ăm'ă-dô* [F. *amadou*, by metaphor from *amadouer* to coax, to cajole—from *madouer*, a word of Ger. origin—from Icel. *mata*, to bait, to allure]: name given to *Polyporus igniarius* and *P. fomentarius*, fungi of the tribe or division *Hymenomycetes*; formerly included in the genus *Boletus*. They grow upon old trees in Britain and on the continent of Europe. The pileus is completely blended with the hymenium, which is pierced with thin-sided, rather angular, tubular, vertical passages—the whole fungus thus appearing as a leathery or fleshy mass; the under side of which is pierced by deep pores. *P. igniarius* is called Hard A., or Touchwood. *P. fomentarius* is called Soft A., or German

AMAIN—AMALEKITES.

Tinder. They are used as styptics for stanching slight wounds; and when steel and flint were in general use for striking fire, were much employed as tinder, being prepared for this purpose by boiling in a solution of nitre. The Soft A. is used for making small surgical pads, for which its elasticity peculiarly fits it. *P. fomentarius*, or a very similar species, is found in India, and used there as in Europe. It is also employed by the Laplanders and others for moxa (q.v.). It is sometimes made into razor-straps, and this use is likewise made of *P. betulinus*. — *P. officinalis*, the *Agaricon* of Dioscorides, which grows upon larch-trees in the s. of Europe, is a drastic purgative, now rarely employed. *P. suaveolens*, which grows upon the stems of willows, and is easily recognized by its anise-like smell, was formerly employed in medicine, in cases of consumption, under the name of *Fungus salicis*. All these species are very similar in appearance. Another species of the same genus, *P. destructor*, is one of the fungi known by the name of Dry Rot (q.v.). — The remarkably light wood of *Hernandia Guianensis*, a shrub of the natural order *Thymelæaceæ* (q.v.), is readily kindled by flint and steel, and is used in Guiana as A.



Polyporus suaveolens.

AMAIN, ad. *ā-mān'* [AS. *a*, on; *māgen*, might, power: Goth. *magan*; AS. *mega*, to be able]: with energy or force; suddenly; at once: applied by sailors in such orders or directions as 'lower amain,' 'strike amain,' etc.

AMALEKITES, *ām'a-lek-its*: one of the most fierce and warlike of the Canaanitish nations. They dwelt 'in the land of the south' (Numbers xiii. 29), that is, in the land s. of Palestine, or between Idumea and Egypt. From the very first they manifested an uncompromising hostility to the Israelites, whose rear-guard they smote after the passage through the Red Sea. In consequence of this they received no mercy at the hands of the Israelites when the latter had established themselves in Palestine. Saul (1 Sam. xv. 2) nearly annihilated them. Twenty years later, David, while dwelling amongst the Philistines, penetrated into their land and made dreadful slaughter of them. After this they made a last desperate reprisal, but were overtaken by David in the midst of their drinking and dancing; and 'from twilight even unto the evening of the next day' he smote them, 'and there escaped not a man of them, save 400 young men who rode upon camels and fled.' The descendants of these were

AMALFI—AMALGAM.

finally extirpated in the days of Hezekiah, king of Judah, by the Simeonites.

AMALFI, *â-mâl'fē*: seaport on the Gulf of Salerno, on the w. coast of southern Italy; has a very ancient cathedral, and is the seat of a bishop. It is said to have been founded under Constantine the Great, and was long a powerful and independent state, having at one time a population of 50,000; and about the close of the 11th c., fell under the power of the Normans. The maritime laws of A. (*Tabula Amalphitana*) once prevailed throughout Italy. The unique manuscript of the pandects (q. v.) was discovered at A.; and Flavio Gioja, the inventor of the compass, and Masaniello, were born there. Pop. upward of 5,000.

AMALGAM, n. *â-mâl'găm* [F. *amalgame*—from Gr. *ama*, together; *gamêō*, I marry; or *ama*, *malagma*, that which softens—from *malasso*, I soften]: a mixture of mercury with another metal; an alloy of which mercury forms a constituent part. **AMALGAMATE**, v. *â-mâl'gă-măt*, to compound or mix mercury with another metal; to blend; to incorporate. **AMAL'GAMA'TING**, imp. **AMAL'GAMA'TED**, pp. **AMALGAMATION**, n. *â-mâl'gă-mă'shŭn*, a mixing together different bodies; a union of two or more bodies into one, *as of railway companies*.—**SYN.** of 'amalgamate': to coalesce; unite; cohere; join.

AMALGAM: term applied to that class of alloys (q. v.) in which one of the combining metals is mercury. On the nature of the union, it has been observed that 'on adding successive small quantities of silver to mercury, a great variety of fluid amalgams are apparently produced; but in reality, the chief, if not the sole compound, is a solid A., which is merely diffused throughout the fluid mass.' The fluidity of an A. thus seems to depend on there being an excess of mercury above what is necessary to form a definite compound. Mercury unites readily with gold and silver at the usual temperature. It has no disposition to unite with iron even when hot. A solid A. of tin is used to silver looking-glasses.

Amalgamation is employed on a small scale in some processes of gilding, the silver or other metal being overlaid with a film of gold A., and the mercury being then driven off by heat. But its most extensive use is in separating gold, and especially silver, from certain of their ores. The mercury dissolves the particles of the metal, and leaves the earthy particles; it is then easily separated from the gold or silver. This process, discovered in Mexico in 1557 by Bartolomé de Medina, is very extensively used in Mexico at the present time, and has been introduced with great success into the Californian and Australian gold-fields. The mode of application is to crush the quartz rock which serves as the matrix in which the small particles of gold are embedded; place the fragments in a barrel or revolving drum with mercury, and agitate for some time. The mercury attaches all the gold particles to itself; and in the apparatus, when fully agitated, there is found a semi-fluid mass, which is the mercury, appearing half congealed, and containing

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all the gold. It is only necessary to place this A. in a retort and apply heat, when the mercury sublimes over—and can be re-employed for further amalgamation—and leaves the gold in the body of the retort. This process is the only known method of separating the finer particles of gold from a mass of rock, and is always used by the gold-crushing companies. Indeed, it is now believed that this truly commercial mode of gold-seeking is the only one which, in a few years, will be in use.

Several amalgams may be regarded as definite chemical compounds. Thus, when gold-leaf is placed in mercury, and the A. so produced filtered by being squeezed in a chamois-leather bag, the uncombined mercury oozes through the skin, but a definite A. of 2 of gold and 1 of mercury remains behind in the leather filter. Tin A. is employed in silvering looking-glasses, and is formed by laying a sheet of tin-foil on a table, covering it with mercury, and then placing, by a sliding movement, the sheet of glass over it. This A. contains 3 of mercury and 1 of tin; glass balls are silvered with an A. of 16 mercury, 1 tin, 1 lead, and 2 bismuth. A silver A. highly crystalline—and, from the clusters of crystals somewhat resembling a tree, called *Arbor Diana*, or Tree of Diana—is prepared from 3 parts of the strongest solution of nitrate of silver, 2 parts of solution of proto-nitrate of mercury added to an A. of 7 mercury and 1 silver. In a day or two, the arborescent appearance presents itself, and the crystals contain 65 per cent mercury, and 35 silver. The A. used for frictional electric machines is made from 1 tin, 1 zinc, and 3 mercury, to which sand is afterwards added.

AMALIE, *à-mâ'le-eh*, ANNA, Duchess of Saxe-Weimar: 1739–1807: an amiable and generous patron of literature; during the latter part of the 18th c., the centre of the court of Weimar. Left a widow in the second year of her marriage (1758), her judicious rule, as guardian of her infant son, enabled the country to recover from the effects of the Seven Years' War, and promoted the education of the people. She appointed Wieland tutor to her son, afterwards duke, and attracted to Weimar such men as Herder, Goethe, Knebel, Böttiger, Musæus, Schiller; forming a galaxy of genius such as, perhaps, has graced no other court. Even after resigning the government into the hands of her son in 1775, she continued to be surrounded by the same society. She has the high distinction of having honored and encouraged the greatest writers that Germany has produced. The battle of Jena is said to have broken her heart: she died six months after that event.

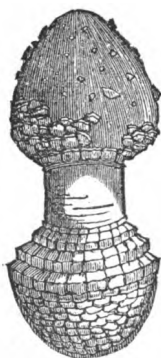
AMALIE, MARIE: wife of Louis Philippe, king of the French; daughter of King Ferdinand I. (IV.) of the Two Sicilies; 1782–Apr. 26—1866. When she married Louis Philippe (then Duke of Orleans), he was a political exile, without a hope of ever rising to the throne of France. It was a marriage of personal choice on both sides, consequently happy. After Louis Philippe's elevation to the throne, the queen avoided interference in political affairs, and devoted her attention to beneficence. In her domestic

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relations, her conduct was highly exemplary, and won the esteem of all parties; indeed, the only charge ever preferred against her was her supposed excess of piety. She shared the fortune of her exiled husband, and was very respectfully received in England. Louis Philippe, shortly before his death (at Claremont, 1850), gave expression to the love and esteem with which he regarded his faithful wife. She died at Claremont in 1866.

AMANDE DE TERRE : see CYPERUS.

AMANITA, *ăm-ăn-î-tă*: genus of Fungi, nearly allied to *Agaricus*, but bursting from a *volva*. *A. muscaria*, common in woods, especially of fir and beech, is one of the most poisonous fungi. It is sometimes called FLY AGARIC, being used in Sweden and other countries to kill flies and bugs,



Amanita Muscaria,
in a young state.



Amanita Muscaria,
full-grown, more reduced.

for which purpose it is steeped in milk. The pileus or cap is of an orange-red color, with white warts, the gills white, and the stem bulbous. It grows to a considerable size. Notwithstanding its very poisonous nature, it is used by the Kamchatkadeles to produce intoxication, and it imparts an intoxicating property to the urine of those who swallow it.

AMANUENSIS, n. *ă-măn'ũ-ăn'sis* [L.—from *ab*, and *manus*, the hand]: one who writes down the words of another; a writer to dictation. AMAN'UEN'SES, n. plu.

AMARANTÉ, *â-mă-rân'ta* (anc. *Ante Moranam*): town of Portugal, prov. of Minho, on the Tamega, a branch of the Douro; 32 m. n.e. from Oporto. The Tamega is crossed by a handsome stone bridge. The town is well built, but dull and decayed. A church, erected in the 16th c., is an interesting specimen of the Flamboyant style. A. was the scene of a fierce conflict between the French and the Portuguese in 1809, when the bridge was defended by the Portuguese for several days, and the French committed great barbarities. Pop. 2,500.

AMARANTH.

AMARANTH, n. *am-à-rànth*, or **AM'ARAN'THUS** [F. *amaranthe*—from L. *amarantus*; Gr. *amarantos*, unfading]: a flower inclined to a purple color; in *poetry*, a flower which never fades; *Amaranthus hypochondriacus*, is Prince's Feather, and *A. caudatus*, is Love-lies-bleeding, Ord. *Amaranthaceæ*. **AM'ARAN'THINE**, a. *-thin*, pertaining to.

AMARANTH (*Amaranthus*): genus of plants of the natural order *Amaranthaceæ*. This order contains nearly 800 known species, natives of tropical and temperate countries, but abounding chiefly within the tropics. They are herbs or shrubs, with simple exstipulate leaves, and flowers in heads or spikes; the perianth usually colored, 8-5-partite, hypogynous, scarious, persistent, generally surrounded with small bractæ; the stamens hypogynous, either 5, and opposite the segments of the perianth, or some multiple of 5, distinct or united into a tube, sometimes partly abortive; the anthers either 2-celled or 1-celled; the ovary single, superior, 1-celled, with 1 or few ovules, which hang from a free central cord; style single or absent; stigma simple or compound; fruit, a small membranous bag or utricle, or a caryopsis (q.v.), rarely baccate; seeds lense-shaped, externally crustaceous, embryo curved round the circumference; albumen farinaceous.—The genus *Amaranthus* has mostly monœcious flowers (although the order is generally hermaphrodite), with two or three stigmas, and a 1-celled, 1-seeded utricle, bursting all round transversely.

Some of the species are naturally of singular form, and others assume singular but monstrous forms through cultivation. *A. caudatus* (Love-lies-bleeding), *A. cruentus*, *A. hypochondriacus* (Prince's Feather), and other species, are common annuals in flower-gardens. The spikes of *A. caudatus* are sometimes several ft. in length. The dry red bracts which surround the flower retain their freshness for a long time after being gathered; for which reason the plant has been employed by poets as an emblem of immortality.—The Globe A. (*Gomphrena globosa*) and the Cockscomb (q.v.), well-known tender annuals, belong to the same natural order. The Globe A. is much cultivated in Portugal and other Rom. Cath. countries for adorning churches in winter. Its flowers, of a shining purple, retain their beauty and freshness for several years. No species of



Love-lies-bleeding
(*Amaranthus caudatus*).

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the order can be regarded as a true native of Britain, although *Amaranthus Blitum* is now found in waste places near London. In some countries *A. Blitum*, *A. oleraceus* (Chusan Han-tsi), and other species, are used as pot-herbs. Wholesome mucilaginous qualities are very generally found in the leaves throughout the order. The seeds of *Amaranthus frumentaceus* (called Kiery) and of *A. anardhana* are gathered as corn-crops in India.—Medicinal properties are ascribed to some species of the order, particularly to *Gomphrena officinalis* and *macrocephala*, which have a high and probably exaggerated reputation in Brazil as cures for many diseases.

AMARAPURA, *ām-ā-rā-pō'rā*, or UMMERAPOORA, a city of the past, was, before 1853, the cap. of Burmah; on the left bank of the Irrawaddy, 9 m. n.e. from Ava, in lat. 21° 57', long. 96° 7'. It was founded in 1783. In 1810, it was totally destroyed by fire, and in 1839 almost totally by an earthquake. In 1852, 3, by order of the king, A. was finally deserted, and the capital of the empire fixed at Mandalay. The pop. in 1810 was estimated at 170,000. Nothing remains of the old city but some rows of beautiful trees and a few ruined pagodas. In a temple between A. and Mandalay is a famous colossal bronze image of Gautama (Buddha).

AMARA-SINHA, *ām-ā-rā-* or *ām'ūr-ā-sing'ha*: a celebrated Hindu grammarian probably of great antiquity; generally supposed to have been one of the 'nine gems' who adorned the throne of King Vikramaditya I., B.C. 56. But Mr. Bentley (*Asiatic Researches*) places him as late as A.D. 11th c., while Mr. Colebrooke assigns the close of the 5th as the most probable; who wrote a variety of works, only one of which has come down to us, the *Amara-Kosha*, or Thesaurus of Amara; sometimes called the *Trikanda*, i.e., the Tripartite. Regarding the author's life, little is known. He is known to have been a Buddhist; and it is almost universally believed that his writings perished during the fierce persecution to which that sect was subjected by the orthodox Brahmins, in the 3d, 4th, and 5th centuries. This tradition harmonizes with the earliest of the three ages in which he is said to have lived.

The *Amara-Kosha* is a Sanscrit vocabulary, divided into three books and 18 chapters, and containing in all about 10,000 words. The words are classed according to the nature of the things signified by them. Almost all the grammarians of Hindustan imitate, translate, or comment upon the work of A.

An excellent edition of the *Amara-Kosha*, with notes in English and an index, was published by Colebrooke, 1808 (reprinted 1829); the Sanscrit text at Calcutta in 1818; and in 1839, a French translation.

AMARI, *ā-mā'rē*, MICHELE: 1806, July 7—1870, Sep. 20; b. Palermo: Italian historian and orientalist. In youth he was in straitened circumstances, and even meditated becoming a bandit, but was roused from his morbidness by falling passionately in love with an English lady. Although he

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did not win her hand, he won a knowledge of the English language, the first result of which was a translation of Sir Walter Scott's *Marmion* (Palermo, 1832). A. soon became a political 'suspect,' though he had conducted himself during the tumult of 1837 with exemplary moderation. He remained four years in Naples, where he was diligent in historical investigations. In 1842, appeared his *La Guerra del Vespro Siciliano* (The War of the Sicilian Vespers), his masterpiece, often republished. Its great merit is its successful disproving of the common notion, that the terrible massacre so named was the result of a deep and ramified conspiracy of the nobles. A. proves from a letter of Charles of Anjou himself, as well as from numerous other sources, that it was a popular or national outbreak, occasioned by the tyranny of the foreign rulers, and that it really brought about the deliverance of Sicily. The book was quickly prohibited, and, as a consequence, widely read. It was translated into German by Dr. Schroöder of Hildesheim, and into English by Lord Ellesmere. A. fled to France, where he studied Arabic and modern Greek, and prepared his *History of the Mussulmans in Sicily*. At the revolution of 1848, he returned to Palermo, where he had been appointed prof. of public law, but shortly after his arrival was elected vice-pres. of the committee of war. He was next sent on a diplomatic mission by the provisional government to France and England. In 1849 he published at Paris *La Sicile et les Bourbons*, to show up the pretensions of the Neapolitan sovereign. After the Sicilian insurrection had been quelled, A. resided in Paris, engaged in literary pursuits till 1860, when he returned to Italy. He was made senator next year, and in 1863,4, was Minister of Instruction. Other writings of A. are upon the language and history of the Arabs, in the *Revue Archéologique*, the *Journal Asiatique*, etc. He d. at Palermo.

AMARYLLIDÆ, or AMARYLLIDACEÆ, *am-ä-ril-lid-ä-ä-ä*: natural order of monocotyledonous plants, including many species distinguished by the beauty of their flowers. They are herbaceous plants, or when, as in the genera *Agave* and *Fourcroya*, they form woody stems, they have still the character of gigantic herbaceous plants rather than of shrubs. The greater part are bulbous-rooted. The leaves are sword-shaped, with parallel veins; the flowers have spathaceous bracts. The perianth is regular, 6 cleft, sometimes with a corona. The stamens are 6, arising from the perianth, sometimes cohering by their dilated bases; the anthers bursting inwardly. The ovary is inferior, 3-celled, with 1, 2, or many anatropal ovules; the style is single; the stigma, 3-lobed. The fruit is a 3-celled, 3-valved capsule, or a 1-3-seeded berry. The seed is albuminous, with the embryo nearly straight.—There are about 400 known species of this order, natives of tropical, or sub-tropical, and more sparingly, of temperate regions—particularly abundant at the Cape of Good Hope. A few species only are European. Many of them are much prized ornaments of gardens and hot-houses. Among these are different species of NARCISSUS (q.v.), AMARYLLIS (q.v.), CRINUM (q.v.), ALSTROEMERIA (q.v.), NERINE,

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COBURGIA, BRUNSVIGIA, PANCRA TIUM, FOURCROYA, etc. To this order belong the SNOWDROP (q.v.) and SNOWFLAKE (q.v.); it includes also the AMERICAN ALOE (*Agave*, q.v.).

AMARYLLIS, n. *ăm'ă-rîl'lis* [name of a country girl in Vergil]: genus of bulbous-rooted plants of the natural order



Amaryllis formosissima.

Amaryllidæ (q.v.), having a simple 6-partite perianth, and containing a large number of species, natives of the warmer regions of the globe. Many of them have flowers of very great beauty. A species of this genus, *A. formosissima*, was brought to Europe from S. Amer. in the end of the 17th c., and has since been in common cultivation as a garden-flower. Its flowers are of a beautiful red color, exhibiting a play of golden gleams in the sunshine. They are scentless. *A. amabilis*, *A. Josephineæ*, and *A. vittata* are amongst the most admired bulbous-rooted plants. *A. Sarniensis* is one of the most hardy species, flowering freely in Guernsey, with a little protection during winter, and commonly called Guernsey Lily, although it is supposed to be a

native of Japan. By artificial impregnation, a great number of hybrid forms have been produced in this genus.

AMASIA, *ă-mă'sē'ă*, or AMASIEH, or AMASIYAH (anc. *Amasia*); t. of Asia Minor, the principal town of the vilayet of Sivas, on the right bank of the Yeshil-Irmak, about 80 m. from the mouth of the river, and 200 m. s.w. from Trebizond. It stands in a deep and narrow valley, and the river flows through a narrow channel, between precipitous rocky banks. The streets are narrow and crooked; the houses mostly of wood, although some are of stone, all roofed with tiles. The river is crossed by three stone bridges, and one wooden bridge. One of the stone bridges is supposed to be Roman. The ancient town, the birthplace of Strabo, occupied both banks of the river, and the remains of the Acropolis crown a lofty rock on the side of the river opposite to the present town. There are numerous other interesting remains of antiquity, particularly the tombs of the kings of Pontus, whose capital A. was, excavated in the face of a steep rock, and some Saracenic buildings. Water is raised from the river by means of wheels driven by the river itself, for irrigation of the gardens and mulberry plantations. Much silk is produced in and around A.; also wine, cotton, corn, and madder. Silver, copper, and salt mines are wrought in the neighborhood. Silk and salt are the chief articles of export. A. is the seat of an Armenian bishop. Pop. 30,000, about one-third being Christians.

AMASIS, *ă-mă'sis*, King of Egypt: reigned B.C. 569-525. Of humble origin, he rose to be general under Apries, the

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last king of the line of Psammetichus. Being sent to put down an insurrection, he joined the rebels, and was proclaimed king. He cultivated the friendship of the Greeks, opened to them the commerce of Egypt, previously confined to Naucratis, married a Greek wife, and took a body-guard of Greeks into pay. Pythagoras and Solon are said to have visited him. For his alliance with Polycrates, and the singular reason for which Herodotus makes him break it off, see **POLYCRATES**. During his reign of 44 years, he greatly promoted the prosperity and adornment of Egypt. Immediately after his death, the country was conquered by Cambyzes of Persia.

AMASS, *v.* *â-mäs'* [*F. amasser*, to heap up: *L. massa*, a mass]: to gather into a heap; to collect many things together. **AMASSING**, *imp.* **AMASSED**, *pp.* *â-mäs't'*. **AMASSMENT**, *n.* a large quantity collected.—**SYN.** of 'amass': to heap; accumulate; pile; collect.

AMASTHENIC, *a.* *âm'äs-thên'ik* [*Gr. ama*, together; *sthenos*, force]: uniting the chemical rays of light into one focus, as a certain kind of lens.

AMATE, *v.* *â-mât'* [*AS. a*, on, and *mate*: *Icel. mati*, an equal, a comrade]: in *OE.*, to accompany; to associate with, as a companion.

AMATE, *v.* *â-mât'* [*OF. amater*, to mortify, to abate: *It. matto*, mad, foolish: *Sp. matar*, to kill, to quench]: in *OE.*, to perplex; to confound; to terrify.

AMATEUR, *n.* *âm'â-tër* [*F.*—from *L. amātor*, a lover]: one who loves and cultivates any art or science, but does not follow it as a profession.

AMATITLAN, *â-mâ-tē-tlân'*: dist. of Central America, near Guatemala city, embosomed in abrupt mountains of volcanic origin. It produces cochineal. In the dist. is the city of A. (pop. 6,000), and a lake.

AMATIVENESS, *n.* *âm'â-tiv-nēs* [*L. amo*, I love; *amātus*, loved]: a propensity to love. **AMATIVE**, *a.* *âm'â-tiv*, full of love; amatory. **AMATORY**, *a.* *âm'â-tēr'ī*, relating to love; causing love; also **AMATORIAL**, *a.* *âm'â-tō-rī-âl*. **AMATORIAL**, *ad.* *-âl-lī*.

AMATRICÉ, *â-mâ-trē-chā*: *t.* of *s. Italy*, province of Aquila or Abruzzo Ulteriore II., on the right bank of the Tronto, 21 m. n. by w. from Aquila: formerly a place of much greater importance than at present. It has five churches. The inhabitants are chiefly employed in agriculture and the manufacture of blankets. Pop. 2,240.

AMAUROSIS, *n.* *âm'au-rō'sis* [*Gr. amaurosis*, the act of rendering obscure—from *amauros*, obscure]: imperfect vision or total blindness without any obvious imperfection of the eye, due to paralysis of the optic nerves from various causes. **AMAUROTIC**, *a.* *âm'au-rōt'ik*, pertaining to such partial blindness or loss of sight.

AMAUROSIS: a blindness or obscurity of vision caused by disease of the optic nerve, and this cause may be situated either at the origin of the nerve in the brain, in some part of its course, or at its termination in the retina; and of course

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the degree of blindness will be in proportion to the extent these parts are involved by the disease. See OPTIC NERVE. A. may depend also upon causes remote from the organ of vision; the suppression of accustomed discharges from the body may lead to congestion of the vessels of the brain, and cause A.; and it may spring from many very slight causes, if a predisposition to the disease exists. This is occasionally hereditary. Beer mentions several cases in one family; for three successive generations, all the females who had not borne children became blind in middle age; the males showed a tendency to the disease, but did not become blind. A common cause is exposure to bright light or great heat and light, either natural or artificial, occupation upon minute objects, and employment of the eyes during the hours which ought to be devoted to sleep. In many instances, a single imprudent exposure of the eyes to the operation of some such cause has been sufficient to extinguish the sensibility of the retina; but, in general, it is from long-continued over-excitement of the organs of vision that they begin to fail, and at last become totally unable to continue their office. The heat of the sun, rage, continued stooping, and fevers or other causes, causing congestion, inflammation, or serous effusion in the head, cause A. Some poisonous substances cause A. suddenly, as belladonna, stramonium, and other narcotics given in large doses; and others, applied to the body every day in small quantities, have the same effect, but more slowly. Tobacco is by many classed among these poisons; also mercury and lead.

Exhaustion of the body and depressing mental affections also are causes of A. But its occurrence can seldom be attributed to any single remote cause, but to a number of circumstances acting either consecutively or together for a length of time upon one individual.

The presence of A. is recognized by the history of the case and the appearance of the eyes. The latter have generally a vacant, unmeaning stare, dilated pupils, and do not converge towards an object, but appear to be looking steadfastly at something in the distance. The sclerotic or white of the eye is generally altered in color, and crossed by enlarged blood-vessels. The history of the case varies with the patient. Among the first symptoms are difficulty in calculating distances, as in threading a needle or pouring fluid into a glass; and sometimes there is occasional loss of sight in one eye (*amaurosis vaga*), confusion of vision—sometimes a part of the field of vision will be clear, and part obscured. There are also present spectra or *muscæ volitantes*, which sometimes are permanent, arising from the existence of insensible patches on the retina. Floating specks are merely coincident with the disease.

A. is treated by depletion in the robust, alteratives and tonics in the feeble, and by those remedies which act upon the nervous system, and counter-irritation by blisters or issues behind the ears, or in the neighborhood. Except in very recent cases, the prospect of recovery is slight.

AMAXICHI, *á-máks-í-kí*: cap. of the Ionian island of Santa Maura or Leucadia; built on the edge of the shallow

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lagoons that separate the n.e. part of the island from the mainland. The harbor constructed by the Anglo-Ionian government is protected by a mole, at the end of which is a lighthouse. It is fit only for small craft. A. derives its name from the Greek *amazai*, 'cars,' which the Venetian garrison employed in bringing down the oil and wine from the inland districts to the point nearest the fort of Santa Maura, where subsequently houses began to be erected. The town has a very mean appearance; the buildings are partly of wood, on account of the frequent earthquakes. Slight shocks occur about once a month. Behind A. there is an old olive wood, extending to the base of the neighboring hills, and checkered with cypresses and gardens. The town is the residence of a Greek archbishop, and has 15 churches. Pop. 5,000. A. is now frequently called *Leukas*.

AMAZE, v. *ā-māz'* [It. *smagare*; Sp. *desmayar*, to discourage, to dispirit; Norm. F. *s'esmaier*, to be sad; OE. *esmay*, thought, care]: to confound with terror or wonder; to strike with astonishment or fear. **AMAZING**, imp: **ADJ.** very wonderful; exciting fear, surprise, or wonder. **AMAZED**, pp. *ā-māz'd'*. **AMAZEMENT**, n. astonishment; sudden fear. **AMAZINGLY**, ad. *-li*, to a degree that excites astonishment. **AMAZEDNESS**, n. *ā-mā-z'ēd-nēs*, the state of being amazed.—**SYN.** of 'amaze': to confound; perplex; astonish.

Note.—In *OE.*, **AMAY**, v. *ā-mā'*, or **MAY**, v. was used in the sense of its modern derivations, *amaze* and *dismay*, meaning 'to dismay; to dispirit; to confound; to alarm'—and had its origin from same root words.

AMAZON, n. *ām'ā-zōn* [L. and Gr. *Amāzon*, an Amazon—from Gr. *a*, without; *māzos*, a breast]: one of a race of female warriors; a river in S. Amer., properly the river of the Amazons. **AMAZONIAN**, a. *ām'ā-zō-nī-ān*, pertaining to; of bold, masculine manners. **AMAZON-STONE**, a bluish-green ornamental variety of felspar from the river Amazon.

AMAZON, *ām'ā-zōn*, or **MARANON**, *mā-rān-yōn'*, or **ORELANA**, *ō-rēl-yā'ná*: a river which, after traversing nearly the entire breadth of S. Amer., enters the Atlantic between Brazil and Guiana, by a mouth about 150 m. in width—a mouth which, though it admits the tide for nearly 500 m., is yet so far from meeting the ordinary notion of an estuary that it repels, or at least overlays, the ocean to a distance of more than 50 leagues. With its various tributaries—the Napo, the Putumayo, the Yapura, and the Rio Negro from the n., and the Huallaga, the Yavari, the Jutay, the Jurua, the Coary, the Purus, the Madeira, the Tapajos, and the Xingo from the s.—the A. drains 2,380,000 sq. m., an area equal to two-thirds of Europe, and is estimated to afford an inland navigation of 50,000 m., a line double the circumference of the globe. In every respect, then, the A. may well claim to be the largest of rivers, excepting only that, in volume of contents as distinguished from volume of discharge, the St. Lawrence, with its computed mass of 11,000 cubic m., has been estimated to be equal to all the other bodies of fresh water on the earth's surface, from the A. downwards. With this exception, which—as the St. Lawrence is really a

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series of lakes—is rather apparent than real, the A. stands forth as the king of rivers, whether trunk be compared with trunk, or branches with branches, alike in essential features and in the area of basin. Viewed as one grand system, the A., from its sources, from which the Pacific may be seen within a distance of 60 m., to its embouchure, comprises a course of about 4,000 m.; while, gathering its tribute from both sides of the equator along more than 20° of latitude, it presents, perhaps, between s. and n., a longer line of natural communication than even between w. and e. Reckoning from the western range of the Andes, the A. is but little more than a mountain torrent till it has burst through the gorges of the eastern range of the chain, where it is overhung by peaks that tower thousands of feet above it. But within 300 m. from the Pacific—a journey of about 20 days for loaded mules—the branch called the Huallaga is practicable for steamers, while, after a run of 325 m., the A. is navigable for vessels drawing 5 ft., growing deeper and more available as it rolls its steadily swelling flood towards the ocean. Nor is this the remotest point of clear navigation from the sea, for the Marañon itself is estimated by Hernon to carry the clear navigation about one-fifth higher up, amounting in all to 3,360 m. What an idea do these single threads afford of this matchless net-work of inland navigation! But it is not to its own basin alone, vast as that basin is, that the value of the A. is confined. The Rio Tapajos has its navigation separated only by a portage of 18 m. from that of an affluent of the Plata; the Rio Branco, the main tributary of the Rio Negro, has a water communication which is only two hours distant from that of the Essequibo; while the Rio Negro itself is doubly connected with the Orinoco, receiving from it the navigable Cassiquiare (q.v.), and wanting only a canal over a portage of six hours to complete a still more useful bond of union, whose superior advantages will certainly one day lead to the necessary improvement. In addition to all this, the outlet of this mighty river, besides washing Cayenne, is itself, under nature's guidance, a feeder, as it were, of that highway of nations, the Gulf Stream. Thus does the A., to say nothing more of its maritime relations, bring its inland navigation mediately or immediately to bear on every country, except Chili, in South America—including Venezuela, Ecuador, New Granada, Bolivia, Peru, Brazil, the Guianas, and the several Argentine Republics. This is not mere prospect; not only has the basin proper of the A. been more or less frequently traversed, but also the various joints that knit it to other basins have been tested by experience. The grandest and most singular of them all, besides being explored by Humboldt, has been placed beyond a doubt by the denizens of the country. The barge-builders of San Carlos, at the entrance of the Cassiquiare into the Rio Negro, have long sent vessels not only down the Rio Negro to Para, on the Lower A., but likewise up the Cassiquiare to Angostura, on the Lower Orinoco; thus solving, in their own way, the problem which systematic geographers were elsewhere deriding as worse than a fable—as a sheer impossibility. It was not till

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1867 that the navigation of the A. was thrown open, but now regular lines of steamers ply between its mouth and Yurimaguas on the Huallaga. The most important exports sent down the A. are india-rubber, cocoa, cotton, nuts, copaiaba, palm-fibre, hides, sarsaparilla, farina, tonka beans, arnotto, and tobacco. Other productions of the countries watered by the A., countries well fitted to become the garden of the world, are coffee, sugar, maize, rice, indigo, grapes, bananas, cabinet woods, building timber, game, fish, and precious metals. Steamboat navigation began on the A. in 1853. In that year the Amazon Navigation company, a Brazilian commercial association fostered by the government, sent its first steamer from Pará, the maritime emporium of the A., to Nauta, in Peru. Since then the income of the formerly dull town of Pará has risen from \$250,000 to about \$2,500,000. The company had in 1883 thirty-three steamers. The Peruvian government has also a line of steamers on its reach of the A. The name A. is said to be from an Indian word meaning 'boat-destroyer' (from the dangerous bore in the stream). Marañon was an explorer who visited the river in 1503; and Orellana sailed on it in 1540.

The wonderful discoveries made by the late Professor Agassiz (1865.6) in the *fauna* of the waters of the A. have proved what he himself calls 'a true revelation for science.' Their importance will be seen by contrast. The number of species of fish on the whole globe known to Linnæus about a century ago was 300; in 1840, Captain Wilkes collected only 600 species in a voyage round the world with three ships, in an expedition lasting four years; but Agassiz saw in five months on the A. alone 1,300 species of fish, nearly 1,000 of them new, and about 20 new genera. The *Vacca marina*, the largest fish inhabiting fresh waters, and the Acará, which carries its young in its mouth, especially when there is danger, are denizens of the Amazon.—See *A Journey in Brazil*, by Agassiz (1868); *The River Amazon*, by W. H. Edwards; *Fifteen Thousand Miles on the A.*, by C. B. Brown; *Brazil, the Amazons, and the Coast*, by H. H. Smith (1880); *Between the A. and the Andes*, by Mrs. Mulhall (1882).

AMAZONS, or AMAZONES: according to a very ancient tradition, a nation of women, who suffered no men to remain among them, but marched to battle under the command of their queen, and formed for a long time a formidable state. They held occasional intercourse with the men of the neighboring states. If boys were born to them, they either sent them to their fathers, or killed them. But they brought up the girls for war, and burned off their right breasts, that they might not be prevented from bending the bow. From this custom they received the name of A., that is, 'breastless.' Such is the ordinary tale; the origin of which is perhaps to be accounted for by supposing that vague reports, exaggerated and poetically embellished, had reached the Greeks of the peculiar way in which the women of various Caucasian districts lived, performing military duties which elsewhere devolved on husbands. Ebers and others insist that Greek imagination made the

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institution of armed priestesses, as found amongst various races, into nations of women warriors. In later times, however, the word Amazon has been supposed to have some connection with the Circassian word 'Maza,' signifying the moon, as if the myth of the A. had taken its origin in the worship of the moon, which prevailed on the borders of Asia. Three nations of A. have been mentioned by the ancients. 1. The Asiatic A., from whom the others branched off. These dwelt on the shores of the Black Sea, and among the mountains of the Caucasus, especially in the neighborhood of the modern Trebisond, on the river Thermodon (now Termeh). They are said to have at one time subdued the whole of Asia, and to have built Smyrna, Ephesus, Cumæ, and other cities. Their queen, Hippolyte, or, according to others, Antiope, was killed by Hercules, as the ninth of the labors imposed on him by Eurystheus consisted in taking from her the shoulder belt bestowed on her by Mars. On one of their expeditions, the A. came to Attica, in the time of Theseus. They also marched under the command of their queen, Penthesilea, to assist Priam against the Greeks. They even appear upon the scene in the time of Alexander the Great, when their queen, Thalestris, paid him a visit, in order to become a mother by the conqueror of Asia. 2. The Scythian A., who, in after-times, married among the neighboring Scythians, and withdrew further into Sarmatia. 3. The African A., who, under the command of their queen, Myrina, subdued the Gorgons and Atlantes, marched through Egypt and Arabia, and founded their capital on the Lake Tritonis, but were then annihilated by Hercules. See Stricker, *Die Amazonen in Sage und Geschichte* (Berl. 1873).

AMB or AMBI, *amb* or *am'bi* [L. or Gr.]: a prefix, signifying, both; about.

AMBAGES, n. *am-bā'jēs* [L.—from *ambi*, around; *ago*, I go]: in *OE.*, a circuit of words; a circumlocution.

AMBASSADE, n. *am'bās-sād*, or AM'BASSAGE, n. *-sāj*, in *OE.*, an embassy; the character or business of an ambassador—see next title.

AMBASSADOR, n. *am-bās'sā-der* [F. *ambassadeur*; mid. L. *ambas'ciū*; It. *ambasciata*; old H. Ger. *ambaht*, a minister: Goth. *andbahts*, a servant]: a person sent by a sovereign to represent him in a foreign country. AMBAS'SADRESS, n. *-drēs*, a woman thus sent; the wife of an ambassador. AMBAS'SADO'RIAL, a. *-ā-dō'ri-āl*, pertaining to. AMBASSADOR EXTRAORDINARY, one employed by the sovereign in special missions, while an ordinary ambassador resides in the place to which he is sent, to look after the interests of his country. AMBASSADOR PLENIPOTENTIARY: see PLENIPOTENT.—SYN. of 'ambassador': envoy; plenipotentiary; deputy; minister.

AMBASSADOR.

AMBASSADOR: a diplomatic minister of the highest order. An A. may be defined as an officer sent by one sovereign power or government to another to treat on affairs of state. In a less restricted sense, writers on public law employ the term to denote every kind of diplomatic minister or agent. The credentials, or letters of credence, of an A. are addressed directly by his own sovereign or government to the sovereign (or head of the government) to whom he is sent, and with whom he has the privilege of personal communication. In the performance of all his diplomatic duties, an A. is understood to represent, not only the affairs, but the dignity and the power of his sovereign or governmental head; and by the law of nations, he has many important rights and privileges, the chief of which is exemption from the control of the municipal laws of the nation wherein he is to exercise his functions, an exemption not confined to the A. but extended to all his suite, including not only the persons employed by him in diplomatic services, but his wife, chaplain, and household generally. But there is a dispute among legal writers whether this exemption extends to *all crimes*, or whether it is limited to such offenses as are *mala prohibita*, as coining, and not to those that are *mala in se*, as murder. The law of England appears to have formerly allowed the exemption in the restricted sense only; and in the year 1654, during the Protectorate of Cromwell, the Portuguese A. was tried, convicted and put to death, for an atrocious murder. But now, according to the general practice of England and the rest of Europe, it is considered that the security of an A. in conducting the intercourse of nations is of more importance than the punishment of a particular crime, and therefore few examples have happened in modern times where an A. has been punished for any offense. In regard to civil suits, it was at one time held and laid down by Sir Edward Coke that an A. to the English court was answerable for any contract which was good according to the law of nations. The full exemption of an A. from legal process in civil cases was first recognized by 7 Anne, c. 12, a statute whose history is thus related by Blackstone. 'In the reign of Queen Anne, an A. from Peter the Great, czar of Muscovy, was actually arrested, and taken out of his coach in London, for a debt of £50, which he had there contracted. Instead of applying to be discharged upon his privilege, he gave bail to the action, and the next day complained to the queen. The persons who were concerned in the arrest were examined before the privy council (of which the Lord Chief-justice Holt was at the same time sworn a member), and seventeen were committed to prison, most of whom were prosecuted by information in the court of queen's bench, at the suit of the attorney-general; and at their trial before the lord chief justice, were convicted of the facts by the jury; reserving the question of law, how far those facts were criminal, to be afterwards argued before the judges; which question was never determined. In the mean time, the czar resented this affront very highly, and demanded that the sheriff of Middlesex, and all others con-

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cerned in the arrest, should be punished with instant death. But the queen (to the amazement of that despotic court) directed her secretary to inform him, that she could inflict no punishment upon any the meanest of her subjects, unless warranted by the law of the land; and therefore was persuaded that he would not insist upon impossibilities. To satisfy, however, the clamors of the foreign ministers, who made it a common cause, as well as to appease the wrath of Peter, a bill was brought into parliament, and afterwards passed into a law (the 7th Anne, c. 12), to prevent and punish such outrageous insolence for the future; and with a copy of this act elegantly engrossed and illuminated, accompanied by a letter from the queen, an A. extraordinary was commissioned to appear at Moscow, who declared, that though her majesty could not inflict such a punishment as was required, because of the defect in that particular of the former established constitutions of her kingdom, yet, with the unanimous consent of the parliament, she had caused a new act to be passed, to serve as a law for the future. This humiliating step, says Blackstone, 'was accepted as a full satisfaction by the czar; and the offenders, at his request, were discharged from all further prosecution.'

But although an A. is not amenable to any tribunal of the country he resides in, he cannot misconduct himself with impunity. He must respect the laws and customs of the country in which he is officially resident; and if he violates or offends these laws and customs, he may be complained of to the court or government which he represents; or if the offense is of a very serious nature, his recall may be demanded, or the governmental head to whom he has given such offense may dismiss him peremptorily, and further require that he be brought to trial in his own country. It hardly need be added, that if an A. is guilty of an offense which threatens the safety of the state, he ceases to enjoy the privileges of the exemption in question.

There are some other and inferior privileges very generally allowed to ambassadors: they are permitted the free exercise of their religion; they are, in general, exempted from direct taxation, they have special letter-bags, and they are usually allowed to import their goods without paying any custom-house duties—a privilege, however, which, being liable to abuse, has sometimes been limited.

Ambassadors are of two kinds—first, those who reside regularly at the court to which they are accredited; and, secondly, those sent on special occasions, when they receive the designation of **AMBASSADORS EXTRAORDINARY**. The employment of permanent ambassadors originated in modern times. The diplomatic corps of the British sovereign includes only five ambassadors in the more restricted sense of the word, who are accredited to the courts of Vienna, Paris, St. Petersburg, Constantinople, and Berlin respectively. Inferior diplomatic agents receive the title of **CHARGÉ D'AFFAIRES**, **MINISTER PLENIPOTENTIARY**, or **ENVOY (q.v.)**.

AMBATO—AMBER.

The diplomatic service of the United States is as follows.

COUNTRY.	Rank.	Residence.	Sal- ary.
Argentine Republic	Minister Resident and Consul-General	Buenos Ayres	\$7,500
Austria-Hungary	Envoy Extraordinary and Minister Plenipotentiary	Vienna	12,000
Belgium	Minister Resident	Brussels	7,500
Bolivia	Minister Res. and Con. Gen.	La Paz	5,000
Brazil	Envoy Ex. and Min. Plen.	Rio de Jan'o.	12,000
Central American States: Costa Rica, Guatemala, Honduras, Nicaragua, Salvador.	Envoy Ex. and Min. Plen.	Guatemala	10,000
Chili	Envoy Ex. and Min. Plen.	Santiago	10,000
China	Envoy Ex. and Min. Plen.	Peking	12,000
Colombia	Minister Resident	Bogota	7,500
Corea	Minister Res. and Con. Gen.	Seoul	5,000
Denmark	Minister Res. and Con. Gen.	Copenhagen	5,000
France	Envoy Ex. and Min. Plen.	Paris	17,500
Germany	Envoy Ex. and Min. Plen.	Berlin	17,500
Great Britain	Envoy Ex. and Min. Plen.	London	17,500
Hawaiian Islands	Minister Resident	Honolulu	7,500
Hayti	Minister Res. and Con. Gen.	P't au Prince	5,100
Italy	Envoy Ex. and Min. Plen.	Rome	12,000
Japan	Envoy Ex. and Min. Plen.	Yeddo	12,000
Liberia	Minister Res. and Con. Gen.	Monrovia	5,000
Mexico	Envoy Ex. and Min. Plen.	Mexico	12,000
Netherlands	Minister Resident	The Hague	7,500
Paraguay and Uruguay	Chargé d'Affaires	Montevideo	5,000
Persia	Minister Res. and Con. Gen.	Teheran	5,000
Peru	Envoy Ex. and Min. Plen.	Lima	10,000
Portugal	Minister Res. and Con. Gen.	Lisbon	5,000
Roumania, Servia, and Greece	Minister Res. and Con. Gen.	Bucharest	6,500
Russia	Envoy Ex. and Min. Plen.	St. Petersburg	17,500
Siam	Minister Res. and Con. Gen.	Bangkok	5,000
Spain	Envoy Ex. and Min. Plen.	Madrid	12,000
Sweden and Norway	Minister Resident	Stockholm	7,500
Switzerland	Minister Res. and Con. Gen.	Berne	5,000
Turkey	Envoy Ex. and Min. Plen.	Constantin'le	10,000
Venezuela	Minister Res. and Con. Gen.	Caracas	7,500

AMBATO, *ám-bá'tō*, or ASIENITO D'AMBATO: t. of Ecuador, on the n.e. slope of Chimborazo, 66 m. s. from Quito, 8,859 ft. above the sea. It was destroyed in 1698 by an eruption of Cotopaxi, but was soon rebuilt, and became more flourishing than before. It carries on an active trade in grain, sugar, and cochineal, the products of the surrounding country. Pop. 12,000.

AMBER, n. *ám'ber* [F. *ambre*; It. *am'ra*; Sp. *ambar*; Arab. *anbar* or *anbarum*, ambergris or gray amber]: a fossil gum or gum-resin, with a tinge of yellow, and semi-transparent, found chiefly on the shores of the Baltic Sea: ADJ. made of amber. AMBER-SEED, musk-seed. AMBER-PINE, the tree producing amber. AMBERGRIS, n. *ám'ber-gris* [F. *ambre*; and *gris*, gray—gray amber]: an ash-colored waxy substance found floating on the seas frequented by sperm whales, supposed to be an internal secretion from these animals—used as a fragrant drug in the manufacture of

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perfumes. **AMBREIN**, n. *ăm'brě-în*, a crystalline substance soluble in alcohol, found in amber. **AMBREIC**, a. *ăm'brě-îk*, denoting an acid formed by digesting *ambrein* in nitric acid. *Note.*—*Amber*, and Ar. *anbar* seem to have been applied first to the *gray amber* or odoriferous secretion of certain fish, and then transferred to the yellow or fossil amber.

AMBER: a substance analogous to the vegetable resins, and, in all probability, derived from an extinct coniferous tree, although now appearing, like coal, in connection with beds of which it is usually found, as a product of the mineral kingdom. It is usually of a pale-yellow color, sometimes reddish or brownish, is sometimes transparent, sometimes almost opaque. It occurs in round irregular lumps, grains, or drops; has a perfectly conchoidal fracture, is slightly brittle, emits an agreeable odor when rubbed, melts at 550° F., and burns with a bright flame and pleasant smell. It becomes negatively electric by friction, and possesses this property in a high degree—which, indeed, was first observed in it, and the term electricity is derived from *elektron*, the Greek name of A. The specific gravity of A. is 1·0-1·1. It is ultimately composed of carbon 79, hydrogen 10·5, and oxygen 10·5. An acid called succinic acid (named from the Lat. *succinum*, amber) is obtained from it. A. had formerly a high reputation as a medicine, but the virtues ascribed to it were almost entirely imaginary. An antispasmodic volatile oil is obtained from it by distillation. A. is employed in the arts, for the manufacture of many ornamental articles, and for the preparation of a kind of varnish. Great quantities are consumed in Mohammedan worship at Mecca, and it is in great demand throughout the East. It was obtained



by the ancients from the coasts of the Baltic Sea, where it is still found, especially between Königsberg and Memel, in greater abundance than anywhere else in the world. It is there partly cast up by the sea, partly obtained by means of nets, and partly dug out of a bed of bituminous wood. It is found elsewhere also in coal, and occasionally in diluvial deposits, as in the gravel near London; but it is very rare in Britain. It is obtained in small quantities from the coasts of Sicily and the Adriatic, and is found in different parts of Europe, in Siberia, Greenland, etc. It sometimes encloses insects of species which no longer exist. Leaves also have been found enclosed in it. Specimens which contain insects or leaves being much valued, fictitious ones are often manufactured and imposed upon collectors. According to an ancient fable, A. is the tears of the sisters of Phaëthon, who, after his death, were changed into poplars. The ancients set an immense value

AMBER—AMBIDEXTER.

upon it. Pieces of A. have occasionally been found of 12 or 13 lbs. weight, but such pieces are extremely rare.

AMBER: a decayed city in the Rajpoot state of Jeypoor, India, 4 m. n. by e. from Jeypoor; 26° 59' n. lat., 75° 55' e. long. It is on the margin of a small lake, in a deep hollow among hills; and its temples, houses, and streets are scattered among numerous ravines opening on the lake. Comparatively few of its houses are now inhabited; but on every side are to be seen ghastly Hindu ascetics, sitting amid the tombs and ruined houses. On the slope of an adjacent hill is the vast and gorgeous palace of Amber, a building remarkable for its massiveness and solidity.

AMBERG, *äm'berg*: old cap. of the Upper Palatinate in Bavaria, 35 m. e. of Nürnberg, and 32 n. of Ratisbon; on both sides of the Vitz. The ancient walls are now transformed into shady avenues. A. is the seat of the court of appeal for the district; has a library of 34,000 vols., a lyceum, an agricultural and industrial school, a house of correction, an arsenal, etc. The principal products are firearms, earthenware, woolen cloths, ironmongery, and beer. A. has 14 breweries, a large cattle and swine market, a market for hops, and an important salt-trade. Many of the inhabitants are employed as miners in the neighboring mountains. A. is well built, and the suburbs are adorned with beautiful gardens and shaded alleys. Pop. (1880) 14,583.

AMBERGRIS, *äm'bër-gris* [i.e., gray amber]: a fatty substance, of an ash-gray color, with yellow or reddish striae, like those of marble, which is found in lumps of from half an ounce in weight to 100 lbs. and upwards, floating on the sea, or cast upon the seashore in different parts of the world, and is also taken by whale-fishers from the bowels of the sperm-aceti whale (*Physeter macrocephalus*). Much A. is obtained from the coasts of the Bahama Islands; it is also brought from different parts of the East Indies, and the coasts of Africa and Brazil. It is probable that all of it is produced by the spermaceti whale, and that it is a morbid secretion in the intestinal canal of that animal, derived from the bile. It is highly valued upon account of its agreeable smell, and is much used in perfumery. The price is about 20s. an ounce. It has been strongly recommended for medicinal uses, but is scarcely employed in Europe; although in some parts of Asia and Africa it is much used as a medicine, and also in cookery as a condiment. The specific gravity of A. is scarcely more than 0.9. It almost always contains black spots, which appear to be caused by the presence of beaks of the *Sepia octopodia*, the principal food of the sperm-aceti whale. It consists in great part (85 per cent.) of a peculiar brilliant white crystalline substance called *Ambren*, which is obtained from it by treating it with alcohol.

AMBIDEXTER, n. *äm'bî-dêk's'ter* [L. *ambo*, both; *dex*, the right hand]: one who uses both hands alike; a double-dealer. **AM'BIDEX'TROUS, a. -trūs**, able to use either hand; double-dealing; deceitful. **AM'BIDEX'TROUSLY, -trūs-lī.**

AMBIENT—AMBO.

AMBIENT, a. *ăm'bî-ěnt* [L. *ambiēn'tem*, going about—from *ambi*, around; *ěō*, I go]: surrounding on all sides.

AMBIGUITY, n. *ăm'bî-gū'i-tî* [F. *ambiguité*—from L. *ambiguitatem*, ambiguity—from L. *ambiguus*, doubtful—from *ambi*, around; *ago*, I go: It. *ambiguità*—*lit.*, the going round about the thing]: a thing which may be understood more than one way; uncertainty as to meaning; doubtfulness; state of doubt. **AMBIGUOUS**, a. *ăm-big'ū-ūs* [F. *ambigu*: It. *ambiguo*]: indefinite; doubtful; having more meanings than one. **AMBIGUOUSLY**, ad. *-lî*. **AMBIGUOUSNESS**, n. *-ūs nēs*, the state of being ambiguous.—**SYN.** of 'ambiguous': equivocal; uncertain; doubtful; indistinct; unsettled; indefinite; indeterminate.

AMBIT, n. *ăm'bit* [L. *ambiō*, I go round—from *ambi*, around; *ěō*, I go]: in *OE.*, a compass or circuit.

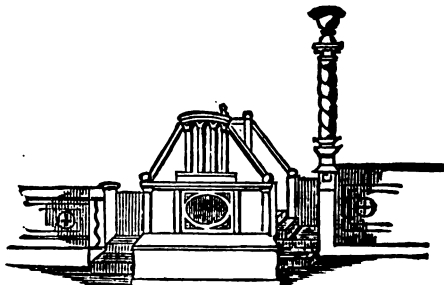
AMBITION, n. *ăm-bish'ŭn* [F. *ambition*—from L. *ambitionem*, seeking eagerly for a favor—from *ambiō*, I go round—from *ambi*, around, and *ěō*, I go—*lit.*, the going about hunting for favor or votes]: the eager desire for the possession of power, fame, excellence, or superiority. **AMBITIONLESS**, a. **AMBITIOUS**, a. *ăm-bish'ūs*, aspiring; desirous of fame or superiority; eager to attain something. **AMBITIOUSLY**, ad. *-lî*.

AMBLE, v. *ăm'bl* [F. *ambler*, to amble; *amble*, an amble: L. *ambulo*, I go up and down—*lit.*, to move up and down, or backwards and forwards]: to move at an easy pace, as a horse: **N.** the pace of a horse between a walk and a trot. **AMBLING**, imp: **ADJ.** going at an easy pace, faster than walking. **AMBLER**, pp. *ăm'bl'd*. **AMBLER**, n. he or that which.

AMBLYGONITE, n. *ăm-blîg'ō-nî* [Gr. *amblygōnios*, having an obtuse angle—from *amblyus*, blunt; *gōniā*, an angle]: a mineral of a greenish-white or sea-green color, often occurring in oblique rhombic prisms.

AMBLYPTERUS, n. *ăm-blîp'tér-ūs* [Gr. *amblyus*, blunt; *pteron*, a fin]: a genus of fossil fishes, distinguished by their very large and wide fins, composed of numerous rays.

AMBO, n. *ăm'bō*, or **AMBON**, n. *ăm'bōn* [Gr. *ambōn*, a



Ambo, St. Clement's Church, Rome.

raised stage: mid. L. *ambo*; F. *ambon*, a pulpit ascended

AMBOISE—AMBOYNA.

by steps]: a kind of reading desk or pulpit, which, in early churches, was placed in the choir. The Gospels and Epistles were read from the A., and sermons were sometimes preached from it, although the more usual practice in the primitive church was for the preacher to stand on the steps in front of the altar. The A. is still to be found in oriental churches, and specimens of it may be seen in Rome. The A. had two ascents—one from the east, and the other from the west. In the Roman churches, there were two ambos, one on each side of the choir, from one of which the Gospel was read, and from the other the Epistle. Where two such ambos were used, their construction was somewhat different. The name A. was also given to the analogium or reading-desk used in monastic choirs, which was usually in the form of an eagle.

AMBOISE, *ônb-wîz'*: t. on the left bank of the Loire, in the dept. of Indre-et-Loire, France. It is 15 m. by railway e. of Tours, in a region so rich in vineyards that it has been called 'the Garden of France.' Its manufactures are unimportant. A. has a castle, in which several French kings have resided. Charles VIII. was born here. It was also the scene of his death. The town is memorable as the place in which the religious wars that devastated the kingdom during the 16th c. broke out, and where the word 'Huguenot' was first applied to the Protestant party. The castle of A. was much improved by Louis Philippe, and was the residence of the Arab chief Abd-el-Kader, during his captivity in France. Pop. 5,000.

AMBOISE, GEORGE D', Cardinal and Prime-minister under Louis XII. of France: 1460–1510, May 25; b. Chaumont-sur-Loire. When only 14 years old he was made bishop of Montauban, and almoner to Louis XI., and in 1493 was made archbishop of Rouen. Initiated in early years into the intrigues of court, he soon, by his zealous services, secured the confidence of Louis of Orleans (Louis XII.), by whom he was made premier in 1498. From this time A. became the prime mover in all the political affairs of France. By his advice, the king undertook the capture of Milan, which had such great influence on the fortunes of France. After the death of Pope Alexander VI., A. endeavored to raise himself to the papal see, and having failed, became the dangerous enemy of the succeeding popes, Pius III.—who occupied the papal chair only 27 days—and Julius II. To secure his own election, A. encouraged a schism between the French Church and the sec of Rome, and convened a separate council, held first at Pisa, afterwards at Milan and Lyons; but his plans were frustrated by the failures of the French army in Italy. He died at Lyons. The Cardinal A. was a dexterous and experienced statesman; but was accused of avarice, vanity, and ambition. It was said that his vast fortune of 11,000,000 livres had been accumulated by not over-scrupulous means. His biography was written by Montaigne (1631) and Legendre (Rouen, 1724).

AMBOYNA, *âm-boy'nä*, or APON, or THAU: most im-

AMBREIN—AMBROSE.

portant of the Spice Islands belonging to the Dutch: lies s.w. from Ceram, and n.w. from Banda, $127^{\circ} 51' 30''$ — $128^{\circ} 22' 15''$ e. long., $3^{\circ} 26' 40''$ — $3^{\circ} 49'$ s. lat.; 287 sq. m. The bay of A. runs into the island lengthways, forming two peninsulas, the northern called Hitu, and the southern, which is the smallest, Leitimor. A. is mountainous, the highest peaks being in Hitu. The climate is healthy—average temperage, 82° F.; lowest 72° . The east monsoon brings heavy rains and storms. There are many rapid streams, and the town of Amboyna is supplied with excellent water from three small rivers. Clove, sago, mango, and cocoa-nut trees are abundant, also fine timber for cabinet-work. The sago-palm grows along the shores. The hills are covered with the cajeput or leucadendron, from the leaves of which a medicinal oil is extracted. The clove produce varies much, but the average of ten years is about 400,000 lbs. In a good year, a bearing tree gives about 5 lbs. Sweet potatoes, coffee, pepper, indigo, rice, and fruits are grown. Fish is plentiful, and on the banks of A. beautiful shells are found. Deer are numerous on Hitu. There are hogs and goats, a few sheep, monkeys, civet-cats, ant-eaters, crocodiles, snakes, etc. Buffaloes, horned cattle, and horses are imported. The natives are for the most part civilized, though still very superstitious. They speak a Malay dialect, and observe customs which indicate a Hindu origin. Daughters are a source of wealth, a payment of jewels, slaves, or clothing being exacted from the bridegroom. The *villagers* are set apart for the clove cultivation, and employed in feudal service during one half of the year. The *freemen* follow handicrafts, grow fruits and vegetables, fish, make fragrant oils, and trade. The trade, which is small, is chiefly carried on by Chinese and Arabs. The Dutch took A. from the Portuguese in 1605. Pop. 28,000, fully one-half being Christians; the remainder, except 2,000 heathen, Mohammedans.

AMBOYNA, the cap., is near the middle of the n.w. shore of Leitimor, on the bay of A., $3^{\circ} 41' 40''$ s. lat., $128^{\circ} 15'$ e. long. A wooden pier, where ships lie in 20 fathoms, leads to the town through Fort Victoria, in which are two companies of infantry and half a company of artillery, making a force of 271 men and 23 officers. The town is built at the base of Mount Soya. The streets are wide and clean: many houses are shaded by nutmeg trees. Principal buildings are two Protestant churches, an orphan house, hospital, etc. Europeans live s.w. of the fort in low stone houses. There is a theatre, and there are well-kept markets. The Netherlands Missionary Soc. has a training-school for native teachers and ministers, with a printing establishment for lesson-books. The Reformed Church has 1,800 members, 1,300 being natives, with 2 ministers who superintend other churches. Since 1854 A. has been a free port. Pop. 10,500.

AMBREIN, AMBREIC: see under AMBER. AMBRITE, n. *ăm'brīt* [so named from its resemblance to *amber*]: a fossil gum-resin, found in the soil of New Zealand.

AMBROSE, *ăm'brōz*, SAINT, one of the most celebrated

AMBROSIA.

of the ancient fathers of the church: about 340-397; b. prob. at Treves, where his father, as prefect of Gaul, was wont to reside. A. received a fortunate omen even in his cradle: a swarm of bees covered the slumbering boy; and the astonished nurse saw that the bees clustered round his mouth, without doing him any harm. His father, perhaps remembering a similar wonder related of Plato, foreboded from this a high destiny for A. He received an excellent education, and went with his brother Satyrus to Milan, in order to follow the legal profession. He soon distinguished himself so much that in 369 he was appointed, by Valentinian, prefect of Upper Italy and Milan. In this office his gentleness and wisdom won for him the esteem and love of the people, whose prosperity had been much injured by the troubles caused by Arianism. Accordingly, by both Arians and Catholics he was unanimously called to be bishop of Milan, 374. A. long refused to accept this dignity, and even left the city; yet he soon returned, was baptized, as hitherto he had been only a catechumen, and was consecrated eight days afterwards. The anniversary of this event is still celebrated as a fête by the Catholic Church. As a bishop, A. won the universal reverence of all, by his mild and gentle character, though severe and unbending towards wickedness of every kind. Thus he repulsed the emperor Theodosius himself even from the door of the church, on account of his having caused the rebellious Thessalonians to be cruelly massacred by Rufinus, excommunicated him, and only restored him to the church after eight months of severe penance. The best edition of his works, in which he followed in many things the Greek theological writers, is that published by the Benedictines (2 vols., Paris, 1686-90). The hymn *Te Deum Laudamus* is usually ascribed to A., but it is asserted by some authorities to have been written 100 years later. The Ambrosian ritual has also received his name, perhaps only because A. had made some changes upon it, which are retained at the present day in the Milanese Church. A commentary on the epistles of Paul, which was formerly ascribed to A., was probably composed by the Roman deacon Hilarius, and is usually quoted as the *Commentary of the Ambrosiaster*. A. is the patron saint of Milan, and the Ambrosian library received its name in honor of him.

AMBROSIA, n. *ăm-brô'zhî-ă* [Gr. *ambrosiā*—from *a*, not; *brotos*, mortal]: said by the ancients to have been the food of the immortals; whatever is pleasant to the taste or smell. AMBROSIAL, a. *-zhî-îl*, pertaining to the food of the gods; pleasing to the taste or smell. AMBROSIALLY, ad. AMBROSIAN, a. *-zhî-în*, of St. Ambrose; ambrosial.

AMBROSIA: in Greek and Roman mythology, the food of the gods, which conferred immortal youth and beauty. It was brought by doves to Jupiter, and was occasionally bestowed upon such human beings as were the peculiar favorites of the gods. A. was also used as a fragrant salve which the goddesses employed to heighten their beauty, with which Jupiter himself anointed his locks; and which had the property of preserving bodies from corruption.

AMBROSIAN CHANT—AMBROSIAN LIBRARY.

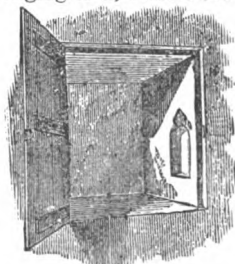
Hindu mythology has also its *amrita* [from *a*, signifying 'without' or 'not,' and the Sanscrit root, allied to the Lat. *mort*, and Greek *brot*], or liquor of immortality, that resulted from the churning of the ocean by the gods; and the gods of the Scandinavian pantheon were preserved in perpetual vigor by eating the apples guarded by Idun.

AMBROSIAN CHANT: the choral music of the early Christian church, introduced from the eastern church into the western by Ambrose, bishop of Milan, 4th c.; it was founded on the first four authentic modes of the ancient Greeks, and was sung antiphonally. It continued in use until the 6th c., when Pope Gregory the Great reformed the music of the church by introducing the Gregorian chant. There exists still another specimen of music by Ambrosius, now known only in the German Lutheran Church by Luther's translation of the words, *Nun kommt der Heiden Heiland*; it is beyond a doubt 1,400 years old, and remains a beautiful specimen of melody, expressive of filial humility and submission. The A. C. continued to be sung in the cathedral at Milan long after Gregory's reformation, and till this day, it is said, it may be heard there.

AMBROSIAN LIBRARY, in Milan: so named in honor of Ambrose, patron saint of that city. It was established in 1609 by the Cardinal Archbishop Federigo Borromeo, who employed learned men to collect books in Europe and Asia. This library was afterwards enriched by the acquisition of the MSS. of the Pinelli collection. Borromeo intended to establish, in connection with the library, a college of sixteen learned men, each having charge of a particular department, to make known the works in the library, and assist strangers in their researches. The want of funds limited the number of members of this college. The chief acting officer, or *prefetto*, and four assistants are *Doctores Bibliothecæ Ambrosianæ*. The library contains 140,000 vols. of printed books, and 8,000 MSS. Among the many rarities belonging to it, besides the Palimpsests and other as yet un-

edited MSS. discovered by Maio, Castiglione, and Mazzuchelli, it contains a 'Vergil,' in which Petrarch had written an account of his first meeting with Laura.

AMBRY, n. *ăm'brî*, or **AUMRY,** n. *aum'rî*, or **AUMBRY,** n. *aum'brî*, or **ALMERY,** *ăl'mér-î* [F. *armoire*; Sp. *armario*; L. *armarium* or *almărium*; Ger. *almer*, a chest or cupboard; supposed by some a corruption of *Almonry*]: a niche in the wall



Ambry, Rushden, Northamptonshire—14th century.

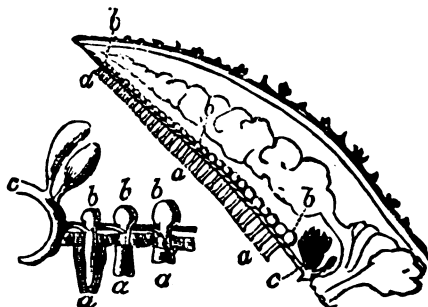
of a church, shut in by a door; or a small cabinet of wood placed by the side of the altar, for the purpose of holding the vestments and utensils, such as the chalices, basins, cruets, etc., used for the service of the mass; also for the

AMBS-ACE--AMBULANCE.

deposit of alms. In monastic buildings, ambries were used for various purposes, such as keeping plate, hanging towels for the monks to dry their hands with before dinner, and the like. In this sense the term A. seems to have been applied to any kind of cupboard which was closed in and locked, and it is so used in Scotland at the present day.

AMBS-ACE or AMES-ACE, n. *ámz'ás* [Norm. F. *ambezatz*; L. *ambo*, both, and *ace*]: a double ace; two aces turned up at the same time at dice.

AMBULACRA, n. plu. *ám'hü lá'krä* [L. *ambuläcrum*, that which serves for walking, a garden-walk]: peculiar organs of locomotion with which star fishes and other *Decapodermata* are furnished. They are fleshy, more or less elongated, and terminated by suckers. They pass through orifices in the shell or other external integument of the animal, and are generally arranged in rows. Those of the *Echini*, or Sea-urchins, are long enough to extend



Ambulacra of Star-fish.

As seen in a longitudinal and vertical section of one of the rays; and three of them in a separate figure on a larger scale in which they are shown in different conditions: a, a, a, tubular feet; b, b, b, in-ternal vesicles; c, the organ which supplies the fluid with which they are filled.

beyond the point of the spines, and by means of them the animal is able to climb a perpendicular rock. They are tubular, and each has at its base a vesicle, filled with a fluid which, on the contraction of the vesicle, is forced into the tube, dilating it to its full extent, whilst, on the contraction of the tube, the fluid returns again into the vesicle. The fluid is not secreted by these vesicles, but provided for them by distinct secreting organs. AM'BULA'CRAL, a. - - *Král*, pert. to.

AMBULANCE: a term somewhat differently applied in different countries. In France, an A. is a portable hospital, one of which is attached to every division of an army in the field, and provided with all the requisites for the medical succor of sick and wounded troops. Such an A. is stationed at some spot removed from immediate danger; and soldiers are sedulously employed after a battle in seeking out the who have fallen, and conveying them to the A.

AMBULANT.

Larrey, during the great wars of the first Napoleon, brought this department of medical business to a high degree of efficiency, and set an example to the rest of Europe. In the English army, *A.*, strictly speaking, means a field hospital with all its wagons, litters, tents, cooking canteen, etc.; but sometimes the name is applied to a four-wheeled wagon or a two-wheeled cart fitted up for the reception of wounded men. When Lord Raglan was about to be sent out with the army, Dr. Guthrie, president of the College of Surgeons, devised a new form of *A.* cart; while Dr. Andrew Smith, director general of the Army and Ordnance Medical Department, invented a new *A.* wagon. Annexed is a figure of Dr. Guthrie's *A.* cart. The badly wounded were laid on it at full length, while those slightly hurt sat in front and rear, and on the sides. A stretcher is slung from the top for the accommodation of the former.



Ambulance-cart.

The back-board is let down for cases requiring amputation. The hospital chests are lashed underneath. The French introduced *cacolets*, consisting of two easy-chairs, slung in panniers across the back of a mule, available where no wheel-carriage could pass. These have since been adopted in the English army, as well as improved hand-litters, wheeled-litters or barrows, and ambulance wagons on a more modern model than those of Smith and Guthrie, but having the same general character. The civil war in the United States, the wars of 1866 and 1870, and above all, the growth of volunteer aid societies under the influence of the Geneva Convention of 1866 (which gave to the wounded and their attendants the privileges of neutrality), have largely developed ambulance equipments, and every international exhibition now contains an immense number of designs for the safe transport of the wounded. The most remarkable step taken in this direction has been the organization of railway ambulances. Trains of carriages either built for the purpose, or adapted from the ordinary rolling stock, can now be fitted up as moving hospitals, with their staff of surgeons and attendants; thus the wounded can be safely and rapidly removed from the encumbered field hospitals to the permanent hospitals of the great cities. All the fittings for thus adapting railway trains to hospital purposes are now kept permanently in store in many countries.

AMBULANT, a. *ăm'bū-lînt* [*F. ambulant*—from *L. am*

AMBURY—AMELIORATE.

bulans or *ambulan'tem*, walking]: walking; strolling; moving from place to place. **AMBULANCE**, n. *ăm'bū-lāns* [F.]: the movable hospital of an army. **AMBULA'TION**, n. a walking about; the act of moving about. **AMBULATORY**, a. *ăm'bū-lī-tēr-i*, that has the power of walking, applied to a single limb, or to an entire animal: N. a place for walking; spec. in *arch.*, the cloisters of a cathedral, college, or the like.

AMBURY: see **ANBURY**.

AMBUSCADE, n. *ăm'būs-kād* [F. *embuscade*, an ambuscade: It. *imboscare*, to hide in a wood; *imboscata*, an ambush—from F. *bois*; It. *bosco*; mid. L. *boscus* (Eng. *bush*), wood—*lit.*, a lying hid in a wood or thicket]: a lying in concealment to attack an enemy by surprise; the place where troops lie in wait: V. to lie in wait. **AMBUSCA'DING**, imp. **AMBUSH**, n. *ăm'boosh* [F. *embuche*, a snare: Norm. F. *embuscher*, to lie in wait in a wood: It. *im*, in; *bosco*, a wood or thicket]: a lying in wait; soldiers concealed in order to attack an enemy by surprise; an ambuscade: V. to lie in wait for; to surprise. **AM'BUSHING**, imp. **AM'BUSHED**, pp. *-boosh-t*. **AMBUSHMENT**, n. *ăm'boosh-měnt*, an ambuscade.

AMBUSCADE, or **AMBUSH**: one of the maneuvers adopted in war. It applies to any attempt to attack an enemy by lying in wait and coming upon him unexpectedly. In former days, when soldiers fought hand to hand more frequently than at present, the A. was much resorted to; but the tactics of modern times render it less available. An A. is neither an 'attack' nor a 'surprise,' in military language; it is something more sudden and unexpected than either. See Col. Malleon, *Ambushes and Surprises* (1885).

AMELANCHIER, *ăm-ěl-ăn'kī-ēr*: genus of plants of the natural order *Rosaceæ* (q. v.), sub-order *Pomeæ*; distinguished by having five ovaries, each of which is divided into two cells, with one ovule in each cell, the ripe fruit including 3-5 carpels. It consists of a few species of small trees with deciduous simple leaves, abundant racemes of white flowers, and small fruit of the size of a pea, or a little larger, soft, juicy, and agreeable. The common A. (*A. vulgaris*) is a native of the Alps, Pyrenees, etc. The other species are natives of North America. *A. botryapium* is sometimes called June-berry, from its fruit ripening in June, before that of any other tree or shrub; and *A. ovalis* produces a very pleasant fruit, which makes excellent puddings. The amelanchiers are planted in Britain merely as ornamental trees. They are very hardy.

AMELIA, *ă-mă'lē-ă* (anc. *Ameria*): t. of central Italy, prov. of Perugia, 21 m. s.w. of Spoleto; picturesquely situated on the mountains between the Nera and the Tiber, about 7 m. from the junction of the two rivers. It is the seat of a bishop, and has a cathedral. Pop. of commune 3,000.

AMELIORATE, v. *ăm-ěl'yō-rāt* [mid. L. *amelioratus*, made better, made more vigorous—from L. *ad*, *melius*, better: F. *ameliorer*, to improve]: to make better; to improve. **AMEL'IORA'TING**, imp. **AMEL'IORA'TED**, pp.

AMEN — AMENDE.

AMEL'IORA'TOR, n. *-tér*, one who. **AMELIORATION**, n. *ä-mel'yô-rä shün*, a making better; improvement. **AMELIORATIVE**, a. *ä-mel'yô-rä'tiv*, producing improvement.

AMEN, v. *ä'mën'* or *ä'mën'* [Gr.—from Heb.]: a Hebrew word of asseveration, equivalent to 'Yea,' 'Truly;' commonly adopted in the forms of Christian worship (Ps. cvi. 48): N. stability, firmness, truth (Rev. iii. 14; 2. Cor. i. 20). In Jewish synagogues, the A. is pronounced by the congregation at the conclusion of the benediction at parting. Among the early Christians, the prayer offered by the presbyter was concluded by the word A., uttered by the congregation. Mention is made of the practice in 1. Cor. xiv. 16. Justin Martyr is the earliest of the fathers who alludes to the use of this response. 'In speaking of the sacrament, he says that, at the close of the benediction and prayer, all the assembly respond "A." According to Tertullian, none but the faithful were permitted to join in the response.' A somewhat noisy and irreverent practice prevailed in the celebration of the Lord's Supper until the 6th c., after which it was discontinued. 'Upon the reception both of the bread and of the wine, each person uttered a loud "A.;" and at the close of the consecration by the priest, all joined in shouting a loud "A.;"' The same custom was observed at baptism, where the sponsors and witnesses responded vehemently. In the Greek Church, the A. was pronounced after the name of each person of the Trinity; and at the close of the baptismal formula, the people responded 'A.' At the conclusion of prayer, it signifies (according to the English Church Catechism) *So be it*; after the repetition of the Creed, *So is it*.

AMENABLE, a. *ä-më'nä-bl* [F. *amener*, to bring or lead into—from F. *mener*, to drive—from mid. L. *minäre*, to drive, as cattle, to lead from place to place—*lit.*, capable of being managed or led]: liable to answer; liable to be called to account. **AME'NABLY**, ad. *-bli*. **AME'NABIL'ITY**, n. *-i-ti*, liability to answer. **AMENAGE**, v. *äm'en-äj* [AS. *a*, on, and *menage* for *manage*]: in *OE.*, to manage; to direct by force. **AMENANCE**, n. *äm'en-äns*, in *OE.*, conduct; behavior.—**SYN.** of 'amenable': accountable; answerable; responsible; docile; liable.

AMEND, v. *ä-mënd'* [F. *amender*, to amend—from L. *emendäre*, to correct, to improve—from L. *ex*, *mendum*, a fault or error]: to free from faults or errors; to correct; to make or grow better; to improve. **AMEND'ING**, imp. **AMEND'ED**, pp. **AMEND'ABLE**, a. *-ä-bl*. **AMEND'ATOR'Y**, a. *-ä-tér'i*, corrective. **AMEND'MENT**, n. a change for the better; improvement; the correction of an error. **AMENDS**, n. *ä-mëndz'*, satisfaction; a recompense. To **MOVE AN AMENDMENT**, to propose a change, an alteration, or an omission in any measure before a public body, or even its rejection.—**SYN.** of 'amend': to correct; reform; emend; rectify; improve;—of 'amends': compensation; remuneration; recompense; satisfaction; requital; reward; meed; guerdon.

AMENDE, n. *ä-möngä'* [F. a fine or penalty]: reparation

AMENDMENT—AMENTACEÆ.

AMENDE HONORABLE, *ä-məngd' ün' ū-rā'w* [F. apology honorable]: a full apology for insult or injury.

AMENDMENT: term in judicial and in parliamentary proceedings. In the former, it is a power of correction of any errors in actions, suits or prosecutions, which has been greatly extended of late, and which has largely improved and simplified the administration of law. In parliamentary practice A. applies to a motion (or the substance of a motion) intended to oppose, vary, or qualify a question or resolution; and in the case of bills, it is employed as a courteous method of dismissing the bill from any further consideration, by moving that instead of 'now,' it be read at the end of three months, six months, or any other term beyond the probable duration of the session. It is also competent to a member to move as an A. to the question a resolution declaratory of some principle adverse to that of the bill, provided it be strictly relevant. A. in judicial proceedings, is the correction, by allowance of the court, of an error committed in the progress of a cause. Amendments at common law are in all cases in the discretion of the court for the furtherance of justice, and may be made at any time while the proceedings are subject to the control of the court. Amendments are, however, always limited by due consideration of the rights of the opposite party, and when by an A. these would be prejudiced or exposed to unreasonable delay, it is not granted.

AMENITY, n. *ä-mən' i-tī* [L. *amēnitas*, delightfulness—from *amēnus*, pleasant: F. *aménité*]: pleasantness; that which delights the eye; suavity or evenness of temper.

AMENOPHIS, *äm' ē-nō'fīs*, **AM' UNOPH**, or **AMEN-HOTEP**: name of three Egyptian kings, of the 18th dynasty. Amenophis I. reigned B.C. 1499-78. He carried on war against Canaan and Ethiopia, and beautified the city of Thebes.

AMENOPHIS II., King of Egypt: succeeded his father, Thotmes III. He took Nineveh by assault, and also conquered the Ethiopians. Some writers identify him with Memnon, who fought in the Trojan war.

AMENOPHIS III., King of Egypt: reigned B.C. 1400-1364. During his reign, the Egyptian kingdom attained its greatest extent, reaching from the Euphrates into Ethiopia. The Egyptian obelisk in the Place de la Concorde, Paris, commemorates his exploits, and many monuments of his period exist, among them "the Vocal Memnon."

AMENTACEÆ, *ä-mən-tä' ä-ē*: according to some botanists, a natural order of dicotyledonous or exogenous plants, consisting entirely of trees and shrubs, whose flowers are unisexual, the male flowers, and very often also the female flowers, disposed in *amenta* or catkins (q.v.), and the perianth either wanting or incomplete. This order, which contains many well known and important trees, is divided into a number of sub-orders, which by many have been directed into distinct orders, forming the *Amental Alliance* of Lindley. Under A. are ranked *Salicinae* or *Salicaceæ* (see **WILLOW**).

AMEN THES—AMERCE.

Myricæ (see CANDLEBERRY MYRTLE), *Casuarinacæ* (see CASUARINA), *Betulacæ* (see BIRCH), *Altingiæ*, called also *Balsamacæ*, but not to be confounded with *Balsaminacæ*, or *Balsamineæ* (see LIQUIDAMBAR); by some also *Corylaceæ* or *Cupuliferæ* (q.v.), and *Platanæ* (see PLANE), both of which Lindley excludes from his Amental Alliance, associating the former with *Juglandacæ* (see WALNUT), as a distinct alliance, and referring the latter to the *Urticæ Alliance*. See URTICACEÆ. On the other hand, he unites with the Amental Alliance the order *Elæagnacæ*. See ELÆAGNUS.

AMEN THES: Egyptian mythological word equivalent in meaning to the Greek word *Hades*, the unseen world. Plutarch explained it as signifying 'the giving and taking,' an interpretation generally adopted, but erroneously. *A.* literally means 'the hiding' (-place understood). On Egyptian monuments is pictured the god Anubis leading to *A.* the souls which, in the form of birds, are escaping from the body through the mouth. He conducts them before the throne of Osiris, who sits as judge, with a council or jury of forty-two persons. The female deity, **AMENT**, represented on monuments in Upper Egypt, is merely a female form of Ammon, and her name has no connection with that of *A.*

AMENTIA, n. *ă-mên'shî-ă* [L. *amentia*—from Gr. *a*, without; L. *mens* or *mentem*, the mind]: imbecility of mind; idiotism.

AMENTUM, n. *ă-mên'tŭm*, or **AMENT**, n. *ăm'ênt* [L. *amentum*, a leathern thong]: in bot., a catkin or spike with scaly bracts hanging somewhat like a rope or cat's tail. **AMENTACEOUS**, a. *ă-mên-tă'shŭs*, producing amenta or catkins. **AMENTIFEROUS**, a. *tîf'êr-ŭs*, denoting plants having amenta or catkins.

AMERBACH, *ă'mêr-băk*, JOHANN: a German printer, one of the first to use Roman instead of Gothic letters. From his press at Basel, he published the works of St. Ambrose and St. Augustine.

AMERCE, v. *ă-mêrs'* [OF. *amercier*; mid. L. *amerciārē*, to impose a pecuniary fine on one guilty of crime: F. *a*, at; *merci*, mercy]: to impose a pecuniary penalty on one, that is, at the discretion or mercy of the court; to cause to pay a sum of money by way of punishment. **AMERC'ING**, imp. **AMERCED**, pp. *ă-mêrst'*. **AMERCEMENT**, n. *ă-mêrs'mênt*, money paid by way of punishment or fine at the mercy of the court. **AMER'CEr**, n. *-sêr*, one who. **AMERCEABLE**, a. *ă-mêrs'ă-ol*.

AMERICA.

AMERICA: one of the four quarters of the globe; smaller than Asia, but nearly as large as both Europe and Africa together. It is the only one of the four main divisions of the land that is washed by all the four great oceans—the Northern, the Atlantic, the Southern, and the Pacific. If Terra del Fuego and Greenland are included—as ought to be done on geological grounds—A. occupies about 150° of long., and about 135° of lat.

Physical Aspect.—If Greenland, described under its own heading, be left out, and this continent be viewed as a whole, the chief feature is the great range of lofty mountains which runs with little interruption from n. to s. near the Pacific coast. This range is remarkable not only for its great length, but also for the fact that its general direction, n. to s., differs from that of the leading mountain ranges of the old world, which, at least in the n. hemisphere, mostly stretch e. and w. See **ROCKY MOUNTAINS; CORDILLERAS OF CENTRAL AMERICA; ANDES.**

Scarcely anywhere do these mountains consist of a single chain. In almost every part of their course, at least two ranges can be made out, separated by one or more valleys or plateaus, or, in s. Chili, where the w. range occupies islands, by the sea. Where they begin, in British North A., three ranges, separated by valleys, are distinguishable; but on entering the United States, the Rocky Mountain region expands into a vast tableland from which numerous detached ranges emerge, almost all of which run more or less n. and s. The only exceptions are the Uintah Range of Utah and Wyoming, and the Sweetwater Range in Wyoming, both of which run e. and w. Within this tableland is included a large area known as the Great Basin (q.v.), which has no outlet; and elsewhere it is a noteworthy fact that the rivers of the Rocky Mountains do not follow the course of the valleys separating the ranges, but cut across the latter, showing that the rivers already existed before the elevation of the mountains, and gradually deepened their beds as the mountains rose. The region immediately to the s. and e. of the Great Basin is highly remarkable on account of the enormous depth to which the rivers, more particularly the Colorado (q.v.) have worn their beds through the rocky plateaus, the sides of their beds rising almost, or in some places quite perpendicularly up, and forming what are known as cañons. To the s. of the vast plateau region of the western states other separate plateaus of greater or less elevation occur, in New Mexico, Mexico, and Central A.; and at the Isthmus of Panama (q.v.), the range may be said to disappear for a short interval where the elevation sinks to between 500 and 600 ft.

Beginning again on the other side of the depression, the s. half of these mountains, the Andes, have their parallel chains more continuous, and for the most part closer together than in North A.; and here, too, the American mountains attain their highest elevation, the highest peak of the Andes being surpassed only by those of the Himalayas. Only in Peru and Bolivia do we meet with plateaus comparable to those of western North A. On the

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side, the slope of the Andes is very steep, descending rapidly down, n. of about 40° s., to a comparatively level strip of from 60 to 80 m. in breadth; while s. of that point, the mountains advance to the sea.

Both in North and South A., the descent is much more gradual on the east side than on the west; in North A., indeed, the slope towards the plains of the Mississippi is so gradual as to be almost imperceptible. In both halves of the continent, too, the land rises again into mountains on the e. side; in North A., in the Laurentian Range (see CAN-ADA), the Green Mountains and the Appalachians (q.v.), and in South A. in the mountains of Guiana n. of the Amazon Valley, and the Serra do Espinhaço and the Serra dos Orgaos, and Serra do Mar in Brazil, to the s. of that valley. Other isolated ranges, such as those of Cordova, Velasco, and Aconquija, occur farther to the s. amid the plains of the Argentine Confederation. In the e. part of North A. the Appalachians form a very important feature, but the only fact of a general nature that need be alluded to here is the existence of a valley varying in breadth from 15 to 50 or 60 m., running longitudinally through the whole extent of the system, forming in the extreme n.e. the valleys of the St. Lawrence, Lake Champlain, and the Hudson; while in Pennsylvania it forms Cumberland Valley, in Virginia the Shenandoah Valley, and in e. Tennessee the Tennessee Valley.

Volcanic manifestations and phenomena of an allied nature are now confined to the w. side of the continent. On the e. side, the volcanic fires are long extinct. There the oldest eruptive rocks, at least in North A., are melaphyres and so-called traps of secondary age. On the Pacific, or more recently elevated side (see below, under *Geology*), there are signs of recent volcanic activity through the whole length of the continent; and there are still active volcanoes at intervals along the whole line from Terra del Fuego to the Mexican plateau, and, again, in Alaska and the Aleutian Islands. The same regions, but more especially the west coast of South A., are more or less subject to earthquakes. On the great table-land of western North A., it may be remarked, Dr. Archibald Geikie met with unmistakable evidence of volcanic eruptions, in a recent geological epoch, on a scale to which the volcanoes of the present day show no parallel, the molten matter having poured forth from huge fissures so as to flood the lower ground with horizontal sheets of basalt. In that region, at present, the chief sign of volcanic activity is in the celebrated geysers of the Yellowstone region.

Climate.—In comparing North A. with Europe and Asia, we must contrast not east and west with each other, but west with west, and east with east—neither Newfoundland with England, nor British Columbia with Kamtchatka, but Kamtchatka with Newfoundland, and England with British Columbia. Such a comparison shows that the difference lies not, as is often assumed, between the two continents, but between the opposite shores of either continent within itself. For instance, at Nain, in Labrador, the mean tem-

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perature is 7° F. below freezing; while at Sitka, in Alaska, it is 12° above freezing. This difference of 19° between the e. and w. coasts of the new world is only a very little less than the difference between the e. coast of the new and the w. coast of the old; for the temperature of Gottenburg, in Sweden, is only 21° higher than that of Nain. It is to be remarked, however, that this difference between the opposite coasts of the two continents diminishes as we proceed southwards. New York is only 7° colder than Naples; and Florida has the same temperature as Cairo. This difference between the two sides both of the old world and the new, and correspondence between the corresponding sides of the land of the two hemispheres, is due to the fact that the same influences act on both continents. In both cases, the n.e. shores are washed by cold currents flowing out of the Arctic Ocean; while the corresponding latitudes on the w. have their temperature maintained by the prevailing warm s.w. winds, and these winds have their temperature kept up by the warm currents which proceed in the same direction from the equatorial parts of the ocean.

But whatever influences may be common to the climates of both continents, there are, as might be expected, interesting contrasts in respect of climate, due to the difference in physical structure between the old world and the new, and especially to the existence in the latter of that long backbone of mountains described in the previous section, and the absence in the n. half of the continent of e. and w. ranges corresponding to the Himalayas and some of the mountains of Siberia and Mongolia. The backbone of mountains exerts an important influence on climate through its entire course, mostly arresting the passage of the clouds and rains so as to make the windward slope a fertile garden, while the leeward slope is a barren desert. The exceptions to this rule will appear on considering the effects of this mountain barrier in different parts.

The n. part of the range lies in a region where, as in the corresponding parts of Europe, the winds are very variable, but where the rain-bearing winds blow chiefly more or less from the s.w. Here, accordingly, the rainy side of the mountains is the w. side, and as in Europe, the heaviest rains are near the w. coast. The chief difference between Europe and this quarter of America lies in the fact, that in A. the proximity of the mountains to the coast causes the annual rainfall to diminish more rapidly to the east than anywhere in Europe except in Norway, where the borders of the Scandinavian plateaus have the same effect. The rainfall in the w. of Vancouver's Island is much heavier than in the e., and here again the rainfall is much heavier than in the valley between the coast range of the main land, and the next range in the interior. At Esquimalt, in the s.e. of Vancouver's Island, the annual rainfall is nearly 30 inches; while at Spence's Bridge, in the valley referred to, the total annual precipitation (including snow converted into rain) is only about 10 inches. Further inland in these latitudes where the rainfall is not so much dependent on w. winds there are ample rains in summer and deep snows in winter.

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Farther s. is a region where the chief rain-bearing winds are still s.w. but where, e. of the mountains, rain is extremely deficient. W. Oregon and the whole of Upper California w. of the Sierra Nevada have an abundant rainfall, and are among the most fertile tracts in the world; while the e. base of the Sierra Nevada (which forms the w. boundary of the Great Basin mentioned in the previous section) is one of the driest regions on the globe; so dry, indeed, that in spite of the low temperature which characterizes the nights there in consequence of the excessive loss of heat by radiation, there is not even a deposition of dew (q.v.). The Great Basin is only part of a wide region which, stretching to the n., e., and s. of that basin, and embracing in all about 1,400,000 sq. m., has been called the Great American Desert; so called, however, with impropriety, inasmuch as, though remarkable for its deficiency of moisture, the region includes large areas richly productive as they are, and capable of being made by artificial means still more so. The report of the U. S. land office for 1876-7, however, describes the whole region from the meridian of 100° w. in the e. to the Sierra Nevada and Cascade Region in the w., and from the Mexican frontier in the s. to the British frontier in the n., as one in which agriculture in the sense in which it is pursued in the Mississippi Valley—agriculture without irrigation—is impossible; and a more recent American surveyor, Mr. Low, has furnished us with more precise details as to this arid region. He classes the districts of the United States in which there is a deficiency of moisture under three heads: First, treeless plains covered with grass, under which head fall Nebraska, Dakota, w. Kansas, and e. Colorado. Second, semi-desert regions, treeless tracts with little or no grass, but covered with low somewhat shrubby plants, such as *atriplex*, *artemisia* (sage-brush), *aplopappus*; under this head fall Nevada, Utah, Wyoming, n.w. Texas, the w. part of the Indian Territory, and New Mexico; but in most of them the mountains with which they are traversed occasion very numerous oases. Third, genuine deserts with only very scanty vegetation, or, over large tracts, with no vegetation at all, such as the Mohave Desert in s. California and w. Arizona, the Gila Desert in s.w. Arizona, and the Painted Desert in n. Arizona and s. Utah.

South of these deserts is a region where the prevailing winds are from the e. This is within the tropics and the trade-winds (see WIND), and the modifications of the trade-winds produced by the configuration of the land surface must be considered. Throughout this region, as far as the valley of the Amazon, the rainfall on the e. side is for the most part divided between a rainy and a dry season, the rain being generally abundant during the former, and scanty during the latter. In this region are included the West India Islands generally. The peninsula of Yucatan, though included within it, is a comparatively dry region, for the surface is so low that it shares to some extent in the rainlessness characteristic of the trade-wind region on the ocean.

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Before considering the w. side of the mountains in this region, it will be well now to look at the more easterly parts of A., which have not yet been considered, to the n. of this region, for there is seen another effect of the same mountain barrier. The lower part of the Mississippi Valley (the states of Louisiana, Mississippi, and Alabama) has the highest rainfall in North A. outside of the tropics, with the exception of the w. maritime strip already referred to. This rain is brought by winds charged with moisture drawn from the steaming area of the Mexican Gulf, and these winds may be regarded partly as trade-winds which have had their course deflected by the obstruction of the Mexican mountains. In part, however, they are directly due to the great rarefaction of the air in the interior of the North American continent. The e. seaboard, again, derives its rain from the Atlantic; and here it is the Appalachian system which divides the rainier districts towards the sea from the drier districts further inland. Here, as in the Mississippi Valley, the total annual rainfall increases as we go southwards. Both in Florida and in the Mississippi states above mentioned, the average rainfall for the whole year reaches 60 inches or upwards.

On the w. side of the mountain barrier in tropical and sub-tropical latitudes, first appears an exceptionally dry region in the n. (Lower California and n.w. Mexico). But further to the s., where evaporation is more rapid, there is not the same dearth of rain. Here the mountain barrier has an opposite effect. It prevents the moisture due to the great local evaporation from being continuously carried away by constant winds, as occurs in the ocean where the trade-winds blow; and hence throughout the whole length of the tropical strip as far as lat. 4° s. there is an abundant rainfall. In the narrow Isthmus of Panama and in Costa Rica the rains are so abundant throughout the year that a rainy and dry season cannot even be distinguished.

But at the point mentioned, lat. 4° s., a sudden and very remarkable change takes place. From that point southward, there follows a strip on the w. side of the Andes, stretching to about 30° s., on which rain hardly ever falls. This, also, has been well shown to be directly due in part to the mountain barrier, of which we have seen various other effects on the climate of this continent. Partly it is due, beyond question, to a cold current which flows n. along the w. coasts of South A. between the degrees of latitude mentioned, for in the n. the climate changes as if by magic where that current leaves the American shores. The direct effect of the current is to reduce the amount of evaporation. But on the w. coast of Africa there is a similar cold current which has a much more limited effect on the climate. Even Damara Land and the so-called Kalahari Desert are by no means as dry as this parched strip in South A.; and farther to the n. there are in the corresponding latitudes of Africa abundant rains. But the effect of the Andes range is this: it cuts off the region of rarefied air on the e. from the Pacific Ocean, and the amount of rarefaction

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in the narrow strip to the w. is not sufficient to produce an indraught of moisture-laden air from beyond the cold current. Hence the total absence of rain till a high elevation on the mountains is reached.

On the high table-lands between the parallel chains of the Andes, the table-lands known in Peru and Bolivia as punas, the rainfall is not very abundant, but is generally sufficient; but there is one extensive region where the want of rain is as absolute as in the desert at the base of the mountains. This region lies in the same latitude as the most desolate part of the desert just referred to, in the s.e. of Bolivia, and n.w. of the Argentine Confederation, and it bears the name of the *Despoblado* or *Unpeopled*. Darwin describes it as 'a valley of the grandest dimensions,' yet 'completely dry, excepting, perhaps, for a few days during some very rainy winter.' He adds that no considerable torrent could ever have flowed down this great valley, and as one proof of the absolute dryness of the region, he mentions that he observed in one place, where a side valley joined the main one, that the bed of the former was lower than that of the latter. 'A mere rivulet of water in the course of an hour would have cut a channel for itself; but it was evident that ages had passed away and no such rivulet had drained this great tributary.'

On the e. side of the Andes, within the latitudes of the desert strip on the w. side, the phenomena are entirely different. The slopes of the Andes themselves on this side are almost constantly supplied with copious rains from the Atlantic, but in the lower regions the character of the rainfall varies. In the valley of the Amazon, which is directly exposed to the trade-winds, there is abundant rain, especially at certain seasons, and the length of the rainy season increases with the ascent of the valley. Further to the s., plenteous rains are confined to the maritime tracts beyond which the mountains of s. Brazil deprive the atmospheric currents of their moisture. Further inland the campos of Brazil, the whole of Paraguay, and the n. part of the Argentine Confederation, are rather deficient in rainfall.

Still southward, beyond the tropics is a region in which the windward side is again the western, as in the temperate parts of North A., and here the rainfall increases on the w. side of the mountains from about lat. 30°, until at Ancud, in the n. of the island of Chiloe, the rainfall for the year rises to about 130 inches. The whole of the southern archipelago, including Terra del Fuego, is deluged with rain; while the plains of Patagonia and the southern part of the Argentine Confederation are almost rainless.

So much regarding the rainfall of the American continent. With regard to the *temperature*, there is little to be said of a general nature in addition to what is stated at the beginning of this section. Here, as elsewhere, the temperature depends chiefly on latitude, elevation, and the character of the prevailing winds: for details as to the way in which these factors affect the temperature in different parts of the American continent, see the articles on the different countries composing it. Besides the general fact already alluded

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to, that wherever a dry region is exposed to a hot sun there are great extremes of temperature between night and day, there are two important circumstances relating to temperature in the American continent. One of these pertains to North A., and is the effect of the second of the two differences between the physical structure of that part of the continent and the corresponding part of the old world—the difference, namely, arising from the absence of e. and w. mountain ranges in the former. The presence of such ranges in the old world shuts off the cold air which in winter accumulates to the n. of them from the regions lying further to the s.; while in North A., during the winter months (November to February) that air from time to time sweeps down the Mississippi Valley, and rapidly reduces the temperature by many degrees, and then, reinforcing the trade-winds, strikes with violence against the w. coast of Mexico. Such winds, known in the United States as ‘northers’ and in Mexico as ‘nortes,’ bring down the mean temperature of the districts affected by them below that of most other places in the same latitude. Ice forms at the mouth of the Mississippi in lat. 30°; and even in the extreme s. of Texas, lat. 26° n., about the same as that of Patna in Bengal, the thermometer has been known to sink on some occasions to 23° F.

The other point to be noticed relating to the temperature of the American continent is that, owing to the greater extent of ice in the s. Polar as compared with the n. Polar regions, and the greater openness of the Antarctic Ocean as compared with the Arctic, the s. parts of South A. have a much colder climate than places in corresponding latitudes in the n. hemisphere. On the w. coast, glaciers descend to the water's edge at the parallel of 46° 30' s., a latitude corresponding nearly to that of La Rochelle in France, or to the n. part of Cape Breton (q.v.) on the e. or colder side of the North American continent; and in the Straits of Magellan, the temperature of the warmest month does not exceed 46° F., and snow falls almost daily.

Hydrography.—It is in its river system that the continent of A. possesses one of its chief advantages over the old world. For further information relating to the principal rivers, see the separate titles. All that is necessary here is to advert to some of the most striking facts regarding this part of the American water-system, especially with reference to the facilities it affords for inland navigation. Thus it may be mentioned that the Amazon drains an area of between two and three millions of sq. m., and discharges a greater quantity of water than the Yenisei, Indus, Ganges, Obi, Lena, Amur, Hoang-ho, and Yang-tse-kiang all put together; while, as regards its navigation, steam-vessels can ascend (though not without interruption) every one of its main branches nearly to the e. foot of the Andes, being thus able to avail themselves of several different routes, each 2,500 m. in length. The Mississippi, again, drains an area nearly, if not quite, as large as that of the Amazon, and although its discharge of water is not nearly so great, its importance as a channel for inland navigation is much greater, in consequence of the greater populousness of the country which it traverses. Its value in this last re-

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spect may be conceived from the fact that it has been found practicable, by means of this river, to send grain and flour entirely by water to Liverpool and Glasgow from St. Paul and Minneapolis, the chief towns in Minnesota, the state in which the Mississippi has its sources. The St. Lawrence, too, possesses far more than an average value in relation to its length as an artery of internal communication.

Of the *Lakes* of A., a brief notice here will be sufficient. The great lakes on the frontiers of Canada and the United States are well known to be the largest bodies of fresh water in the world, though they are not the largest inland seas, the Caspian Sea being much larger than all of them taken together. The largest of the other fresh-water lakes of A. (Lakes Winnipeg, Athabasca, Great Slave Lake, Great Bear Lake, etc.) are all in the Dominion of Canada; but the most interesting geographical feature to notice under this head is the great number both of large and small lakes, mostly with rock-bound shores, with which this part of the continent is studded, a feature in which it corresponds with the extensive area of crystalline rocks occupying Finland and Lapland in similar latitudes in Europe. The largest lake in the United States, the Great Salt Lake in the Great Basin, and the largest in South A., Lake Titicaca on the table-land of Peru and Bolivia, are both salt, or, to be more precise, the one extremely salt and the other brackish.

The vast advantage in point of fluvial communication possessed by the new world over the old, has already been adverted to. There is, however, a hydrographical feature in which one of the grand divisions of the e. continent is decidedly superior to A. The coast line of Europe, in proportion to extent of surface, is incomparably longer than that of even the n. half of the western continent. This is at once apparent on glancing at the two maps. Europe and America are hydrographically so connected as to be the most accessible to each other of any two great portions of the earth. The dividing sea, besides being itself physically by far the narrower of the two intercontinental oceans, is virtually narrowed still more by its winds and its currents. Along a belt of about 30° on either side of the equator, the easterly trade-wind with its attendant current wafts the voyager westward from Africa; while above that belt the reaction, strengthened and accelerated by the peculiar formation of the Caribbean Sea and the Gulf of Mexico, is ready to carry him round again to Europe, under the double pressure of the Florida stream and its generally prevailing breezes from the s.w. Nor yet can the hydrographical relations of A. with Asia be denied their proportion of significance and influence, linked as the two continents are by Behring's Strait, and twice bridged as is their ocean, first by the Aleutian Isles—a continuation of the Kuriles and Japan—and then by the Polynesian clusters, that series of offshoots from the Indian Archipelago.

History.—This may be glanced at under the three heads of Aboriginal Ages, Discovery, and Colonization.

As to the *Aboriginal Ages*, there arises a question, too interesting to be overlooked, and yet too doubtful to be solved,

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as to the origin of the native tribes and peoples of A. Without prejudicing the question (considered under INDIANS) whether the aboriginal inhabitants of A. are to be considered, in an ethnological point of view, as substantially of one stock, it appears highly probable that they did not all spring from one and the same primeval band of adventurers; in other words, that different colonies, voluntary or involuntary, must have reached the new continent at different times. This view, to say nothing of the direct testimony of local traditions, seems to be in itself more than probable, when we consider that through the length and breadth of the universal ocean even the most insignificant specks of land had each received at least one influx of human wanderers. But beyond such probabilities and such traditions the view in question is strengthened by facts which it is difficult otherwise to explain—by diversities of language, by different degrees or kinds of civilization, and, above all, by monuments, architectural or otherwise, of defunct races of bygone days. On this supposition, whence came the successive shoals of invaders? To this question no direct answer can be given. We can only scan the various routes by which, previously to what we call the discovery of A., the old world was most likely to people the American continent. To begin with the natural routes on the side of the Pacific—Behring's Strait, the Aleutian Isles, and the Polynesian Archipelagoes—we can hardly conceive anything but barbarism having been conducted to A. by any one of them. The country that stretches back from Behring's Strait to the Kolyma may be asserted to be, without exception, the most inhospitable portion even of Siberia; and, moreover, the strait itself has more probably been a channel of migration from A. than from Asia, the Tchuktchi of the latter regarding themselves rather as a branch than as the stem of the Tchuktchi of the former. With respect, again, both to the Aleutian Isles and the Polynesian Archipelagoes, the successive stepping-stones in either series, instead of being presumed to have been so many halts for Asiatic Columbuses and Magellans, must rather be viewed as each a mother-country to a new colony, as each a point of departure for a fresh swarm. Thus would the ever-aggravating blight of isolation—exemplified even in the old world among the Laplanders, the Kamtchadales, and the Hottentots—prepare at each remove a deeper and deeper barbarism to land at last on the w. shores of A. Further, if an ancient civilization ever did find its way to A., as certainly appears to have been the case, it must have come directly and immediately from the old world, and that under circumstances and conditions in no sense favorable. In remote times such accidental or unintentional visits of Europeans and Asiatics may have occurred as are known to have actually taken place in more modern days. Japanese junks have repeatedly been driven by stress of weather across the Pacific to the new world; and again, on the Atlantic, the easterly trades, within eight years after Columbus's earliest voyage, wafted the unconscious Portuguese to Brazil, during their second voyage to India—the very first, in fact, which they had attempted

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by steering clear of the headlands of Africa. Such incidents, however frequently they might have happened, were much more likely to civilize existing communities than to found new ones; and it is at least a curious fact that the only aboriginal nations which could be regarded as in any sense civilized at the date of the Spanish conquest, pointed in their traditions to such events as we have endeavored to describe. Mexico and Peru had each had its Cecrops, or semi divine civilizer—the former referring him to the e. across the Atlantic, and the latter to the w. across the Pacific. How far such hypotheses may account for the admitted facts is not left altogether to conjecture. Isolated individuals from England and other civilized lands cast the light of the present on the past. That which William Adams achieved in Japan two hundred years ago, and that which John Young and James Brooke have more recently effected in the Sandwich Islands and in Borneo, perhaps may make more easily understood certain undeniable traces and traditions of aboriginal civilization.

Discovery.—Whatever may have been the kind and degree of aboriginal civilization, A. was destined not to be the perpetual inheritance of the red man. New actors were to appear on the scene, before whom the old possessors were in a great measure to pass away.

Before the times of Columbus, Europeans had certainly visited A. The Scandinavians, after having colonized Iceland in 875, and Greenland in 983, had, by the year 1000, discovered A. as far down as $41^{\circ} 30'$ n. lat., a point near New Bedford, Mass. These Scandinavians afterwards settled in the neighborhood—the mother-country, most probably through the intervention of Iceland and Greenland, maintaining an intercourse with the colony down to the 14th c. But these enterprises do not appear to have left any special impress on the character or prospects of the new continent, being more akin, perhaps, to similar incidents of yet earlier ages, than to the long meditated and well-matured scheme of the illustrious Genoese. After the Scandinavian discovery, and before that of Columbus, A. is believed by some to have been visited by a Welsh prince. In Cardoc's *Historie of Cambria* it is stated that Madoc, son of Owen Gwynnedd, prince of Wales, set sail westward in 1170 with a small fleet, and after a voyage of several weeks, landed in a region totally different, both in its inhabitants and productions, from Europe. Madoc is supposed to have reached the coast of Virginia. Neither this, however, if true, nor the earlier Scandinavian expeditions, can be said even to have formed a connecting link between the A. of the red man and the A. of his white brother. Even if the northmen had possessed resources worthy of their heroic courage, the old world was not yet ripe for the appropriation of the new.

At the end of the 15th c., however, science and politics were alike strengthening Europe for its task. The mariner's compass and the astrolabe had facilitated long voyages out of sight of land; while, in almost every country of Christendom, various causes were consolidating government, and promoting the growth of population—a position which

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derives, perhaps, its best illustration from the fact that the capture of Granada—the last foothold of the Moslem in Spain—preceded by only a few months the discovery of A.

Columbus (q. v.) set out on his great enterprise to discover A. under the patronage of the crown of Spain, 1492, Aug. 3, Friday; at which date, properly speaking, begins the deeply interesting history of A. Had the Atlantic been broader, or had not the easterly trades wafted Columbus almost on a parallel from the Canaries to the Bahamas, he must have failed in his bold attempt; and, in fact, those same easterly trades, assisted by a still nearer approach of the two continents speedily (eight years later) proved their own value in this respect by carrying the Portuguese, without their own consent, to the shores of Brazil. Indeed, Columbus's discovery of A., though not so accidental, was quite as unintentional as that of the Portuguese. It was towards the east that his hopes directed his western course, hopes whose fulfilment still lives in the misapplication to the new world of the terms Indian and Indies. Much of our subsequent knowledge of A. has been owing to the same desire reaching the East Indies that led to the discovery of the new continent. The gorgeous East was the aim alike of Davy Baffin, and Hudson at the n., and of Magellan, Schouten, and Lemaire at the s., as also of the earlier enterprise of Balboa on the Isthmus of Darien; while, under a similar impulse, the French of Canada were ascending lake after lake as nature's ready-made highway to the same goal. Even to more recent times may these remarks be applied. While the eastern coasts of Africa, and the upper shores of Asia, as not bearing on the grand question of oriental trade, were comparatively neglected and forgotten, Cook and Vancouver, in quest of a passage between the two oceans, surveyed every indentation of the coast of A. from Columbia river to Behring's Strait. Nor have the aspirations of Columbus and his noble band of successors and imitators been altogether disappointed. That same continent, which in their case, barred a westward advance along nearly the whole interval between the Arctic and Antarctic circles, Europe already become more than a substitute for the Pacific, which it was found so extensively to displace. By the way across the Isthmus of Panama, the Caribbean, whether for passengers or for goods, is brought near the Pacific by a route nearly parallel to the line of the canal to be mooted by M. Lesseps. Nor is it merely across the narrow span of Central America that art has conquered the barrier of nature. In 1869, continuous railway connection was established between New York and San Francisco, and it became possible, apart from accidental delays, to travel from the commercial capital of the e. coast of the vast domains of the Union to the chief city on the Pacific shore in six days and twelve hours. Numerous railroads of the e. and s. connect with the Union Pacific railroad at Omaha in Nebraska; and from Ogden in Utah to the Pacific the connection is made by the Central Pacific railroad. From New York to San Francisco by the shortest route is about 3,400 m. Recently finished, or in progress, are the Southern Pacific

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from Galveston to San Francisco; the Northern Pacific, from St. Paul to Burrard Inlet; and the Canada Pacific.

Through Columbus's discovery of the new world, colonization, which, since the early ages of Greece, had slumbered for 2,000 years, received an impetus, which, after building up empires in the West, was to build up others in an East richer far than that which was so long the loadstar of European navigators—an East where, almost without a metaphor, the grass was to be wool, and the stones to be gold.

The first-fruits of Columbus's enterprise were the Bahamas, Watling's Island probably being the spot where he landed, 1492, Oct. 11. Without attempting, in so summary a sketch as this, to distinguish the results of each of his four voyages from each other, it is sufficient to state that this great man, besides discovering Hispaniola, or St. Domingo, Cuba, Jamaica, and others of the Antilles, discovered and explored Central A. from Honduras southward along the coast of Veragua, and South A. from the mouths of the Orinoco westward, as far as Margarita. It was on this last-mentioned scene of his operations that he was followed by Hojeda, whose pilot, Amerigo Vespucci (q.v.), has been allowed to wrest from Columbus the glory of giving his name to the new world. Within twenty years after Columbus's first discovery, Ponce de Leon discovered Florida; and, what was certainly of far more consequence, he ascertained that, through the strait which separated that peninsula from the Bahamas, there constantly ran a strong current to the n.e. In 1513, one year later, Vasco Nunez de Balboa crossed the Isthmus of Darien to the Great South Sea, or as it was afterwards named, the Pacific Ocean. About thirteen years before this last event, almost immediately after Columbus's own continental explorations, the interval left between his most southerly point from Honduras, and his most westerly point from the Orinoco, was, in a great measure, filled up by the voyage of Bastidas. To the s. of the Orinoco, Pinzon and Solis sailed along the continent down to 40° s. lat. 1500-14. The former after anticipating, by a few months, the Portuguese on the shores of Brazil, had seen the Amazon; and the latter, sent out for the express purpose of entering, if possible, Balboa's Great South Sea, found his way into the La Plata or Plate, being there slain by the neighboring natives. Moreover, to return to the northward, by the year 1519, different navigators had between them completed the examination of the Gulf of Mexico. Within twenty-seven years, therefore, after Columbus's first departure from Spain, the eastern shores of South and Central A. had been almost continuously explored by the Spaniards down to within 15° of the southern extremity of the continent.

Nor had other nations been idle in the north. The Cabots, on behalf of England, had discovered Newfoundland, and portions of the adjacent continent in 1497. In 1500, the Portuguese, under the Cortereals, sailed along the coast of Labrador nearly up to Hudson's Bay, having, it is supposed, entered the Gulf of St. Lawrence, long known among them as the Gulf of the Two Brothers. Thus gradually there grew up the opinion, since proved true, that any practicable

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passage between the two oceans must be looked for towards the south of the Plate. Accordingly, in 1519, Magellan, a Portuguese in the service of Spain, undertook the voyage in which was discovered the strait that bears his name—a voyage which furnished the first instance of the circumnavigation of the globe. Thus there remained little to be done, unless in the extreme north and the extreme south. In the extreme south, Schouten, a Dutch navigator, discovered, 1610, the passage round Cape Horn; while six years thereafter, Lemaire a mariner of the same nation, passed through the strait of his own name between Staten Land and Terra del Fuego. Towards the north, the French and English divided the labors and honors of the enterprise. Scarcely had Magellan's companions—for he had been killed—returned to Europe, when Verrazzano, under the auspices of Francis I. of France, sailed along what are now the Atlantic shores of the United States, thereby connecting the discoveries of the Cabots with those of Ponce de Leon and again, about ten years later, Jacques Cartier, in the service of the same prince, explored the gulf and river St. Lawrence, penetrating as far to the westward as the island of Montreal. In the extreme north, however, the English may be said to have been without a rival. It is unnecessary, in this summary sketch, to do more than mention names which tell their own story on every map—Davis, Baffin, Lancaster, and Hudson. (See these titles).

To pass now to the western coast of A.: the conquerors Mexico and Peru effected, in a few years, more perhaps they left behind them for future ages to effect, ranging the coast from the southern extremity of Chili to the peninsula and gulf of California. Beyond Lower California, the direction in which there was much to do, the English whose voyage was in 1578, divided with the Spaniards the credit of having discovered Upper California. For two centuries, excepting the half-fabulous voyages of and Fuca, the Spaniards and the English alike slumbered over their task; and it was not till towards the close of the last century that Cook and Vancouver co-operated with Spanish and American navigators in dispelling the mystery that had so long hung over the n.w. coast of A.

To advert to inland discoveries: as early as 1537, six years after the landing of Pizarro in Peru, and two after the founding of Buenos Ayres, the Spaniards met each other on the eastern borders of Peru, from the opposite shores of the continent; and, in 1540, within three years more, they sent forth that eastward expedition which ended in Orellana's exploration of the Amazon, from its source to its mouth. In the northern half of the continent, since the enterprises were of much later date. It was in 1682 that the French first descended the Mississippi; it was in 1771 that Hearne traversed the wilderness from Hudson's Bay to the mouth of the Coppermine; and it was respectively in 1789 and 1793 that Alexander Mackenzie reached the mouth of the river that bears his name, and passed through what is now British Columbia, to the shores of the Pacific Ocean.

Colonization.—Among the European powers that colonized

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A., the most prominent were Spain, Portugal, France, and England.

Spain took the lead, having, with few exceptions, accomplished its task before any rival state had entered on the work. In one respect, its colonies differed from all others on the new continent. Spain alone came in contact with civilization, such as it was among the aborigines; and, accordingly, in Mexico, and Peru, colonization required to be preceded by something like regular war and formal conquest. But, notwithstanding this peculiar obstacle, the colonies of Spain grew at first with a rapidity which, perhaps, has scarcely found its parallel even in the somewhat similar case of Australia. As an illustration of this—for the statement needs no proof—it was colonial resources that armed Cortes and Pizarro for their respective enterprises. Without the direct and immediate aid, in either instance, of the old country, Cuba, within twenty-seven years after the first discovery, equipped the conquerors of Mexico; while the town of Panama, only twelve years later, sent forth the adventurers that were to subjugate Peru. So unexampled a degree of vigor and vitality continued to advance in Spain's transatlantic possessions, precisely while they were so organized and conducted as to afford scope to individual ambition. Never, perhaps, was this scope sufficiently free and full, for, even from the beginning, government often embarrassed and blighted the fairest schemes by its jealous and suspicious interference. But, for a time, it generally found its account in tolerating the unrestricted liberty, or license, of its instruments. It was, therefore, only after law and order were established, and the original actors had disappeared from the scene, that the authorities of the mother-country stereotyped their despotism along the length and breadth of every colony. From that moment, vigor and vitality were succeeded by stagnation and torpor. Still, with such elements of prosperity on every side—above the earth and below it—material interests could not fail to flourish. But the scul had fled; the body alone remained. Under these circumstances, Spain, though continuing to claim the entire continent to the n., more especially on the Pacific, did very little to enforce its pretensions. To this New Mexico and Upper California were the only exceptions. It was not before 1594 that New Mexico was at all occupied; and it was not till a century later that the province, after ten years of bush-fighting, was finally subdued; while it was only in 1767 that the Franciscans, on behalf of Spain, took possession of Upper California. But Spain never abandoned the hope of extending its dominions towards the n.w. coast. As late as 1790, that power, while restoring Nootka Sound, and acknowledging England's right of planting other settlements, took the precaution, useless as it proved, of expressly reserving a similar right to itself; and it was only in 1819, nearly thirty years later, that Spain formally ceded to the United States all its claims to the coast above the parallel of 42°. See AMERICA, SPANISH.

The efforts of Portugal, in the cause of American colonization, were at first less energetic than those of Spain. In

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fact, Portugal, which had doubled the Cape of Good Hope in 1497, was so zealously engaged in the East as to allow a generation to pass before sending any colony to Brazil. The discovery of the country took place in 1500, but its colonization only in 1531, or rather 1548. Within thirty-two years thereafter, in 1580, Brazil, at the same time as Portugal itself, was annexed to the Spanish monarchy, soon afterwards falling, in this its new character, partly into the hands of the revolted Hollanders. In 1640, Brazil, as well as Portugal, threw off the Spanish yoke with the help of the Dutch settlers. But the continued presence of the latter retarded the progress of the colony. It was only after their expulsion, that the Portuguese, who had lost nearly everything in India, turned their attention more largely to Brazil. It accordingly became the most flourishing colony, as such south of the English settlements; and, as the refuge of the House of Braganza from French domination, it received about fifty years ago, an impetus which has rendered it, as an independent state, the most flourishing power of South America.

France, as the claimant to the basins of the St. Lawrence and the Mississippi, may be said rather to have pitched camps than to have planted colonies, in those vast possessions. She regarded America chiefly as a supplementary battlefield for England and herself. Every French settlement was but an inert part of a political machine, powerful indeed, but unwieldy, expensive, and unproductive. The government was everything, and the individual subject nothing. Hence, neither Louisiana nor Canada realized the proper idea of a colony. In corroboration of this may be cited two authentic and official facts. As an encouragement to marriage, rewards and exemptions were held out to the parents of three children; and the erection of a dwelling on a lot of less than 40 arpents (about 32 acres) was prohibited by a royal ordinance. In 1762, France gave up Canada to England, and, as an indirect concession, gave to the same power, transferred Louisiana to Spain. It was also, which, singularly enough, did much to facilitate France's grand scheme, the separation from England of her old colonies.

England, though the most energetic and successful of all in the work of colonization, was the last in the field among the four powers already mentioned. Among her continental colonies, excepting Newfoundland, Virginia, the oldest, was established in 1607, four years after the union of the crowns; and Georgia, the youngest, as late as 1733. With these two exceptions, the remaining eleven were, one and all, founded during that period of civil and religious troubles which, in the mother-country's own history, sent one Stuart to the scaffold, and drove another into exile. In 1620, Massachusetts was occupied by the Puritan fathers; in 1623, and 1631 respectively, New Hampshire and Connecticut were first settled; in 1634, Maryland was granted to Lord Baltimore, a Roman Catholic nobleman; in 1636, Rhode Island became a refuge from the religious intolerance of Massachusetts; in 1653, North Carolina became an offshoot from

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Virginia; in 1664, New York, New Jersey, and Delaware were taken from the Dutch; in 1670, South Carolina was established; and in 1682, Pennsylvania was granted to William Penn. the Quaker, continuing to be a proprietary government down to the Revolution. In nearly all these cases, the civil and religious liberties for which chiefly the colonists expatriated themselves, were secured by liberal, nay, virtually republican charters. Subject only to the appointment of a governor on the part of the crown, every colony was practically a state within itself; and it is a suggestive fact that the very earliest assertion of legislative superiority on the part of the mother-country was 7 and 8 Will. III. c. 22, which, however, only operated negatively by forbidding every colony to make laws repugnant to those of England. With such aspirations and such institutions, the enterprising inhabitants of a new home could not fail to prosper; while their prosperity was rendered more solid and permanent by the comparative poverty of a region where steady industry, in agriculture or in the fisheries, was a necessity. Under these circumstances, the germs of political independence were at work long before the year 1765; and it is not merely a probability, but a fact, that the expulsion of the dreaded power of France from Canada and Louisiana, 1762, was closely connected with the troubles which so soon began.

American Antiquities.—The architectural remains already alluded to in connection with a general estimate of aboriginal civilization, are found in each of the grand divisions of the new continent. Those furthest north may be divided into three groups: one confined chiefly to the area now forming the state of Wisconsin; the second distributed over the valleys of the Ohio and the lower Mississippi, and along the coast of the Mexican Gulf from Florida to Texas; and the third in the remarkable cañon region in the present Utah, Arizona, New Mexico, and Colorado. The structures belonging to the Wisconsin group are remarkable on account of their shape, their ground-plan commonly presenting rough but easily recognizable imitations of the forms of animals (quadrupeds, birds, reptiles, and even men). They are usually found in groups, sometimes in long series, and are seldom surrounded by circumvallations.

The Ohio and Mississippi Valley group vary in character from n. to s.; but throughout the region occupied by them, the structures bear a sufficient resemblance to one another to leave little doubt that they ought all to be referred to the same people. They are mostly confined to the river valleys, and consist of mounds generally pyramidal or conical, built of earth and stone, or both combined. The mounds are mostly truncated, and generally there are steps or a winding path leading to the top. The more northerly of these mounds are frequently in groups, inclosed by circumvallations, which are sometimes regular, sometimes irregular in shape, the latter being always constructed in adaptation to the nature of the ground, and manifestly intended for defense. The regular ones are mostly square or circular, but sometimes in the form of rectangles, ellipses, or polygons, and are all built on flat, carefully-selected river-ter-

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races. These were constructed either to be used in connection with religious services, or for some other non-war-like purpose. The structure of the mounds, or the nature of the remains found in them, shows that they were either places of sacrifice, places used in other ways for temple service, or places of burial. In the mounds have been found, besides human remains, knives, axes, chisels, lance-heads, and other articles, partly of excellent workmanship. Silver and copper are the only two metals that the mound-builders can be shown to have been acquainted with. Many of the mounds are adorned with sculptures, the outlines of which are said to be simple but correct. The common animals still characteristic of A. are all represented in extremely beautiful style, the execution being sometimes, it is stated, not behind that of Greek art. The most extensive groups of mounds are always found at the junction of two rivers. Near Portsmouth, at the influx of the Scioto into the Ohio are three groups forming one great series extending along the Ohio for 7½ m. In Ohio these remains are remarkably abundant, and the single county of Ross in that state contains nearly 100 circumvallations and 500 mounds. Along the Gulf of Mexico circumvallations are extremely rare, and the mounds become larger and more elaborate in structure so as to approach in form the Teocallis (q.v.) of Mexico. Scarcely any approximation can be made to the exact date to which these remains must be referred, but it is certain that they must be thousands of years old; for it is found first, that they are never constructed on the most recent river terraces; and, second, that in many cases the mounds and circumvallations are now overgrown by forests.

The last group of North American antiquities, those of the cañon region, are those which have been most recently brought to light and examined, and in some respects the most remarkable of all. They are distributed over a large area now perfectly desert on the terraces of the precipitous cliffs overhanging the beds of the Rio Mancas, Rio San Juan, Rio Chaco, and other streams; and, from the region in which they are found, their builders are known as the 'Anasazi' or 'Hohokam' dwellers. Where a wide stretch of flat land is to be found by a river's bank, remains of a large town may be met with, but many of the habitations of these people were built on the sides of the cliffs themselves over yawning abysses, in spots which cannot be reached from above, and to which it is now equally impossible to climb from below. Recent explorations have shown that some of these remains belonged to a densely-populated settlement that must have extended for several thousand sq. m. over the adjoining parts of Utah, Colorado, Arizona, and New Mexico; and among other sculptures on the walls of the cañons, is to be seen a head of maize, showing apparently that there grain was cultivated by the inhabitants of that settlement.

For the antiquities of Central and Southern A. see MEXICO: PERU: TEOCALLI: CHICHEN: PALENQUE: CHOLULA: etc. A more thorough exploration of the antiquities of Mexico and Central A. than any hitherto undertaken is in progress under the conduct of M. Désiré

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Charnay, the cost being borne by a wealthy American gentleman. Regarding the antiquities of the Mississippi Valley, the most complete information is to be found in Squier and Davis's *Ancient Monuments of the Mississippi Valley*; and regarding those of the cañon region, which have been explored by Hayden, Wilson, Jackson, Holmes, and Ingersoll, in a report by Hardacre.

Geology.—Of the geology of the American continent, as a whole, only enough is known to authorize a very general sketch of its geological history. It is known that in early Palæozoic times, the present continent of A. was represented by a number of islands, the largest of which corresponds to the southern part of the Dominion of Canada, together with a large portion of the east and north-east of the United States, and the two next in importance to the modern Guiana and Brazil; while a large number of smaller islands in the west seem to have occupied the regions where the different ranges of the Rocky Mountains and the Andes now stretch. The greatest part of Greenland, and of the Greater Antilles, seem likewise to have existed in the form of islands at the same remote period. The subsequent geological history of the continent of A. consisted mainly in the gradual filling up of the gaps between these islands, so far as they are yet filled up, and in the elevation of the mountain chains to their present height. But in A., as elsewhere, the process of filling up gaps was not a continuous one, but varied with phases of emergence and submergence. The islands already referred to, however, remained throughout the whole period more or less as dry land, and the alterations of land and water affected chiefly the intervening spaces.

Of all these islands, the oldest as well as the largest was that in the n.e. part of the northern half of the continent. It is here that we have the most extensive development of the oldest sedimentary deposits in the world, the strata forming the Laurentian System (q.v.) on the estuary of St. Lawrence. This island, which consisted of two portions, one running more or less e. and w. through what is now chiefly the Dominion of Canada, and another running n.e. and s.w. through the eastern states, was enormously enlarged after the close of the Silurian epoch, chiefly by the addition of new land within these two branches. This new land is represented by the Silurian deposits so extensively developed on both sides of the St. Lawrence, and to the s. of the great lakes. A still greater accession of land had been made by the close of the Devonian and Lower Carboniferous epoch, when the dry land in this part of A. formed a somewhat compact island extending on the w. almost everywhere to at least 95° w., while on the s. it extended at two points on different sides of the present course of the Mississippi to at least 33° s., and on the e. was nowhere very far from the present coast-line, which it actually attained from Long Island Sound northward.

The climate of this vast island was warm and moist, and a large part of its surface was occupied by marshes covered with a vegetation that gave rise to the vast coal-fields of the Appalachian region and the Mississippi Valley (Illinois,

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Missouri, Kansas, etc.). As yet, however, the Appalachian Mountains were not. So far, the only mountains in the North American continent were the Green Mountains in the n.e. states, and the rudiments of the Rocky Mountains in the west. Not till about the close of the Palaeozoic era did those folds and contortions take place which led to the elevation of the Appalachian Mountains, leading at the same time to the dislocations of the sedimentary rocks, in some cases to the depth of more than 10,000 feet.

Meanwhile the w. part of the North American continent was still composed of islands, some large, some comparatively small; and this western portion of the continent was isolated, even in Jurassic times, from the vast eastern island just described by a sea extending right up to the Arctic Ocean. During the Cretaceous period, this sea still extended at least as high as the Saskatchewan Valley, and this period belong those deposits from which have been obtained the remains of gigantic saurians of various kinds as well as of toothed birds (*Odontornithes*, q.v.), for which American palaeontology is remarkable.

The complete connection between the e. and w. halves of the North American continent was not effected till the close of the Cretaceous period, and even during the Tertiary period, part of the intervening surface was covered with immense fresh-water lakes, the ancient beds have yielded mammalian relics (marsupials, ancestral forms of the horse and tapir, etc.) as interesting as the remains of the previous age. At the same time the sea extended on the side of the Gulf of Mexico up to the point of the Mississippi to a little above the point at which the river is now joined by the Ohio, and from this point the coast trended s.w. through Missouri, Arkansas, and to Mexico; and on the other side, s. through Tennessee and Mississippi, and then e. to Alabama, about 100 miles from the present coast. On the e. the coast had been little since Jurassic times; but by the close of the Tertiary epoch the North American continent, as far as the United States, had been brought nearly to its present form. The Rocky Mountain region was now continuous and the mountains themselves had been raised to their full height. The most important additions of later (post-tertiary) times were the peninsula of Florida, wholly of Tertiary origin, and a strip of land along the n. shore of the Gulf of Mexico. Another great change of post-tertiary date was the temporary submergence of the entire area of the great western lake stretching far to the southward of the present lakes, and probably having a southern outlet through the Mississippi.

As to the south of the United States, little can be said but it may be mentioned that it is only in the n. part of Mexico (in the state of Sonora) that we first meet with granitic and ancient crystalline rocks which pass northward in a wide continuous stretch through the w. part of the United States. North A., there can be no doubt, was separated from South A. in very recent geological times, probably as late as the Pliocene, by an arm of the sea lying where the Isthmus

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mus of Panama now lies; and the final filling up of the intervals between the South American islands of Brazil, Guiana, and the Andes appears also of no earlier than tertiary date. To that epoch are referred the deposits now forming the llanos of the Orinoco, the valley of the Amazon, and the plains of the Argentine Confederation and Patagonia; while the superficial deposits of the pampas are of still later (quaternary or pleistocene) age. As in North A., the e. half of the continent was the first to reach its present elevation, and the Andes, like the Rocky Mountains, although long in existence apparently as an island, or series of islands, were first raised into lofty mountains during tertiary times. On the other hand, all the isolated ranges of the n. part of the Argentine Confederation appear to consist of the oldest igneous and metamorphic rocks, and must also have existed as islands or mountains from a very early period.

The four largest of the West Indian Islands are all composed of a nucleus of granitic rocks, on which lie, in certain places, limestones chiefly of Cretaceous, but partly also of younger age; and all the islands to the e., as far as Barbuda and Antigua, are either Cretaceous or Tertiary; while to the s. of these last two islands all the members of the group are of volcanic origin, and appear (at least all those from St. Lucia southward) to have belonged at one time to a range of volcanic mountains forming part of South A., not to have been originally volcanic islands. Tobago and Trinidad must have been separated from South A. only in very recent times. In the west, this group seems never to have been connected with the mainland of A., except for a short time, and then the connection must have been with Yucatan, not with that portion of the continent which now forms the United States, and which, as has been already shown, was separated from the West Indies by a wide expanse of sea till a quite recent geological period.

The tertiary and post-tertiary deposits of South A., like those of North A., are peculiarly interesting on account of their mammalian remains. From the tertiary deposits have been obtained both the *Anoplotherium* (q.v.) and the *Palæotherium* (q.v.), the predecessors of our present ungulates so abundant in Europe also in tertiary times, and the more recent deposits of the pampas and the shores of Patagonia have yielded a number of very extraordinary extinct animals peculiar to South A., among which we may note the *Glyptodon*, a huge armadillo like animal; the *Macrauchenia*, the nearest extinct ally of the llamas and alpacas of the present day; the *Megatherium* (q.v.) and its allies, the extinct representatives of the modern sloths; and the *Toxodon*, an animal as large as a *Megatherium* or an elephant, but shown by the structure of its teeth to be allied to the Rodents, the order which includes most of the smallest mammals at the present day.

For the volcanic phenomena, see above, under *Physical Aspect*.

Botany.—Considering the vegetation of A. first with reference to its affinities, and beginning in the n., we find there a remarkably close correspondence with the flora of

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the same latitudes in the old world. The Arctic flora of A. is in fact part of a common flora throughout the north polar regions, with only slight variations according to longitude. Out of nearly 400 species of flowering plants belonging to Arctic A., upwards of 250 are regarded by Hooker as Scandinavian forms. The general diffusion of this flora throughout the Arctic Regions points to the probability of a former land-connection between the old and the new worlds in the region of Behring's Straits; and when the fact is considered that the deepest part of these straits is no more than 80 fathoms, the probability of that connection is enhanced. Further south, the affinity between the floras of the old and new world becomes less and less; and, what is more peculiar, there is greater affinity between the flora of the e. side of North A. and that of Japan and Eastern Asia, than between the two floras on opposite shores of the Atlantic or the Pacific. This affinity was first pointed out by the American botanist and geologist Asa Gray, who at the same time divined the true explanation of the phenomenon. He maintained that in a former geological epoch, a much milder climate must have prevailed in high latitudes, and at that time the flora, which has representatives in the states of A. closely allied to those of Japan, must have been generally distributed throughout the Arctic regions, and that when colder climates supervened, this flora migrated southward along various meridians. In this southward migration, however, the flora became differentiated according to the differences of climate in lower latitudes, and as North A. and Eastern Asia correspond in climates, so their floras came to correspond in the constituents of their flora. The main fact which lies at the bottom of this explanation is the extension of a flora now confined to more southern latitudes to regions far within the Arctic regions, was afterwards confirmed by the discovery of abundant remains of such a flora in Tertiary (Miocene) deposits in Greenland, Spitzbergen, Grinnell Land, on the Mackenzie river, and elsewhere; and hence Engler has applied to this flora the name of the Arcto-tertiary element in vegetation.

GEOGRAPHICAL DISTRIBUTION OF ANIMALS AND PLANTS.

It is this element which predominates in the vegetation of A. as far s. as the table-land of Mexico. And here a remarkable fact appears. The flora of the table-land of Mexico is almost totally distinct from that of the low lands at its base, although in most cases a highland flora is allied to the adjoining flora belonging to lower elevations. The reason of this is, that the table-land of Mexico was directly open to the reception of a flora suitable to it derived from more northern latitudes, while the flora of the lower regions, being tropical in character and accordingly perennial vegetation, could not so quickly adapt itself to the conditions of a table-land on which there was an alternation of summer vegetation with a winter's repose.

The table-land of Mexico may thus be said to form the boundary between the regions in which the Arcto-tertiary and Neotropical elements of Engler respectively predominate. The latter element then prevails throughout the whole

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of South A. on the e. side of the Andes to the s. of Patagonia, although with the widest possible difference in the general aspect of the vegetation in accordance with the differences of climate. In the valley of the Amazon we have the vegetation at the very height of tropical richness and variety; while further s., in the campos of Brazil, it becomes scantier, and then more and more sparse still fruther s. into and through Patagonia. It is this Neotropical region in which the flora of the new world presents least affinity to that of the old.

There remains for consideration the chain of the Andes itself. The w. side of this chain, from about 34° S. to the s. extremity of the continent, including the whole of Terra del Fuego, bears a vegetation sufficiently peculiar in its composition to be regarded as distinct from that of the adjoining parts of the continent. This strip is what is known as the Antarctic Forest region, and is characterized by the predominance in it of what Engler calls the Old Oceanic element, consisting of vegetable forms scattered over the islands of the southern hemisphere, including Australia and New Zealand, as well as the s. parts of the continents of A. and Africa. It is this element in the vegetation especially which gives to the flora of the Antarctic Forest region a greater affinity to that of the old world than that of the Neotropical region, and in particular which gives to it that affinity to the floras of Australia and New Zealand long ago pointed out by Hooker. This last affinity has been accounted for by the supposition of a greater extent of land-surface, together with a milder climate in the Antarctic regions in an earlier epoch, and this explanation, it may be remarked, is quite in keeping with the present theory of the Glacial Period (q.v.). But it is not merely this Old Oceanic element which shows the alliance of the vegetation of this part of A. to that of the old world. Another peculiarity of the same region is that it contains a very considerable number of Arctic and even Scandinavian plants. Hooker counts no less than 70 Scandinavian species in the flora of this region, and though other botanists find in a great many cases specific differences between the forms of the Antarctic Forest region and those of Scandinavia, this does not affect the closeness of the affinity. There can be no doubt that these forms must have reached their southern habitat by travelling along the American backbone of mountains; but in the opinion of Hooker, these mountains must at one time have reached a greater elevation in Central A. to enable them to traverse that interval in their southward migration. A certain proportion of Scandinavian forms are found at every part of the chain, but most have survived in the southern region, where the climate most closely resembles that of Scandinavia itself.

As for the remainder of the Andes region, the portion to the n. of 34° s., its flora is regarded by Engler as being on the whole most closely allied to that of the Neotropical region, to which he refers it; but it contains with the forms that indicate that alliance a considerable admixture of others

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derived both from the Arcto-tertiary element in the north and the Old Oceanic in the south.

As might be expected from the geological history of the West Indian Islands (see above, under *Geology*), the flora of that group shows little special affinity to that of North A., from which it was separated till a quite recent geological era by a wide expanse of sea. As a whole, the flora is Neotropical in character, and that of Trinidad is entirely South American.

When the vegetation of A. is considered with reference to its habit and general aspect, the correspondence between vegetation and climate is exhibited in a peculiarly striking manner, especially with regard to the presence or absence of forests. South of the region of Arctic vegetation, strictly so called (that is, s. of a line which rises to beyond the Arctic circle in the w., but sinks to about 59° n. in the e.), forests prevail, except where they have given place to cultivation throughout the continent, wherever there is sufficient moisture. In the dry regions—which include, as was shown in the section on climate, almost the whole area of the United States west of the Mississippi to the Sierra Nevada, as lower California and Mexico as far as the tropic cer in South A.—the campos of Brazil, and almost the of the low-lying regions southward to the Straits of Magellan, and also the strip on the w. of the Andes from about 34° s., forests are absent and trees rare, except the courses of the streams. Yet in South A. about thirds of the whole area is covered by dense forests.

In the forests of the n.w. the trees are almost all conifers but these gradually give place to foliage-trees towards s.e.; and in the e. states of North A., foliage-trees dominate. The forest region of the w. states, however, —the region which covers the moist and equable slopes of the Rocky Mountains—is quite peculiar in character, being remarkable for its hosts of giant such as the Lambert pine, the Douglas spruce, and wood, a congener of the rarer mammoth tree or *tonia* (q v.: see also PUGET SOUND). In the tropics forests are too varied in their character to be described in general terms, but it may be mentioned that here, in the new world as in the old world, there is a remarkable abundance of palms; and further, that on the e. slopes, of the Andes, cinchonas are so abundant within the tropics as to give a quite peculiar character to that part of the region. Further south, in the Antarctic Forest region, the characteristic trees are partly foliage-trees and partly peculiar conifers, such as the *Araucaria* and *Podocarpus*.

In the drier regions of North A. vast areas are almost entirely covered with fodder-plants, such as that known by the name of the sage-brush (*Artemisia*), and grasses such as the buffalo-grass and grama. Further south, cactuses and cas (the Spanish bayonet) prevail. In South A., the characteristic vegetation of the drier regions consists mainly of cactuses.

Among the natural orders and sub-orders confined to the new world (chiefly to the Neotropical region) are the Bromel-

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liaceæ, Sarraceniaceæ, Vochysiaceæ, Cactaceæ (with the single exception of the genus *Rhipsalis*), Agavæ (a sub-order of *Amaryllidaceæ*), *Hydrophyllaceæ*, and the *Gesneraceæ*.

Maize is one of the most important of the botanical productions of A. It is the only important cultivated grain of American origin; it was in cultivation before the advent of Europeans, by whom its value was soon recognized, and it has now become an important crop in climates suitable for it in all quarters of the world. The other chief grains have all been introduced into A. by Europeans, with the sugarcane, the banana and plantain, coffee, flax, and many other plants now generally cultivated both in tropical and temperate regions. The yam is regarded as among its native productions, common to its tropical regions with those of other quarters of the world. Tobacco is a native production of A., the cultivation and use of which extended from it to the old world, and rapidly became prevalent among a great part of mankind. More than one species, or at least varieties, of cotton were in cultivation among the natives before the arrival of the Europeans, but the species now most generally cultivated in A. is of eastern origin and European introduction. But of all the vegetable productions of A., the potato is the most important and useful. A. produces also the Jerusalem artichoke and several other plants, valuable for their roots and tubers, as the arracacha, the melloco, etc., the use of which has scarcely yet extended beyond their native regions. With them may be mentioned the quinoa, which is not a grain (the seed of a grass), but the seed of a species of *Chenopodium* or goose-foot, resembling the seeds of the cereal grasses in its qualities, and extensively cultivated on the high table-lands of Chili and Peru. Tapioca, arrowroot, cocoa, vanilla, pimenta or Jamaica pepper, and Cayenne pepper are among the native productions of the tropical parts of A. The Agave (q.v.) or American aloe, valuable both for its fibre and its juice, has now become common in the warm parts of Europe, and in similar climates in other quarters of the globe. The pine-apple is a native of tropical A., although now naturalized, or nearly so, in other tropical regions. Tropical A. and the West Indies produce also many other fine fruits, among which are the guava, different species of anona or custard-apple, and of granadilla or passion-flower.—The forests of North A. yield much valuable timber, chiefly different kinds of oak and pine. The black walnut and hickory of the United States are much esteemed. The West Indies and neighboring parts of the mainland yield mahogany; and from the same regions comes logwood, one of the most useful dye-woods. The tropical forests of South A. produce many valuable timber-trees, of which perhaps the most deserving of notice are the Greenheart (q.v.) or Bibiri, and the Mora. Brazil wood and Pernambuco wood are among their dye-woods. One of the most remarkable productions of this region is the Cow-tree (q.v.), the juice of which possesses many properties in common with milk, and is used instead of it. The milky juice of some other trees of tropical A.

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thickens into caoutchouc.—Different parts of South A. produce *Maté* (q.v.) or Paraguay tea, a species of holly, the leaves of which possess properties similar to those of tea and coffee, and afford a beverage extensively used, although not yet an article of export to other parts of the world; and the Coca (q.v.), a shrub of which the leaf has been, from a remote period, employed by the Indians as a narcotic.

Zoology.—A. forms the Nearctic and Neotropical regions in the scheme adopted by Mr. Wallace in his treatises on distribution. See GEOGRAPHICAL DISTRIBUTION OF ANIMALS AND PLANTS. The former includes all temperate and North A., including Greenland, and its s. boundary is fixed by Mr. Wallace at a line running from the Rio Grande del Norte on the e. coast to a point nearly opposite Cape St. Lucas on the w., in such a manner, however, as to include the whole of the Mexican table-land in the more northerly of the two regions. In this respect it agrees with the botanical line of demarcation indicated in the section on Botany.

With regard to the fauna of the Nearctic region, the most notable fact, perhaps, is the same as that already mentioned in relation to the flora—the close agreement between it and that of the corresponding latitudes of the old world, and especially in the higher latitudes. ‘At first sight,’ says Mr. Wallace, ‘the mammalia of North A. do not seem to differ much from those of Europe or Northern Asia. There are cats, lynxes, wolves and foxes, weasels, bears, elk and deer, voles, beavers, squirrels, marmots, and hares, all very similar to those of the eastern hemisphere, and several hardly distinguishable. Even the bison, or “buffalo,” of the prairies, formerly so abundant and characteristic, now rapidly disappearing, is a close ally of the now almost extinct “aurochs” of Lithuania.’—*Island Life*. But besides these forms which North A. shares with the corresponding region of the old world, the former region has likewise distinctive forms sufficiently numerous to mark it out as a separate region geologically. Thus among mammals it has ‘three peculiar genera of moles, one of which, the star-nosed mole, is a most extraordinary creature, quite unlike anything else;’ three peculiar genera of weasels, including the well-known skunk; the raccoons, a highly distinctive family of carnivora; in the Rocky Mountains, the pronghorn antelope (*Antilocapra*), and the mountain-goat of the trappers (*Aplocerus*); many peculiar rodents, such as the family of the pouched rats (*Geomyidæ*), the so-called prairie-dog (*Cynomys*), a remarkable creature between the marmots and the spermophile squirrels, very abundant on the prairies; further, the tree porcupine and the opossum (*Didelphys*), the last belonging to an order of mammals (the *Marsupialia*) not known in the present geological epoch in the old world outside the boundaries of the Australian region. Among birds there is an absence of the characteristic families of *Muscicapidæ*, *Sturnidæ*, and *Sylviadæ* (true fly-catchers, starlings, and warblers) of the old world; while there are present such peculiar forms as the American fly-catchers and starlings (*Tyrannidæ* and *Icteridæ*), in addition to mocking-birds,

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bluejays, tanagers, humming-birds, turkey-buzzards, and wild turkeys. And among reptiles, there are true rattlesnakes, several genera of Iguanidæ (an exclusively American family), and an unusual number of tailed Batrachians; including the two peculiar families of the Sirens and Amphiumidæ, and the equivocal axolotl, an ally to the European Proteus.

The correspondence between the fauna of the Nearctic region and that of the Palæarctic region (the name applied to the similarly situated region of the old world) is not difficult to account for, in view of the probable land-connection between the two continents in the region of Behring's Strait, already referred to in the section on Botany. What seems much more difficult to account for is the very marked degree of peculiarity which characterizes the more southerly of the two regions into which the American continent is geologically divided. For in spite of the fact that this region, the Neotropical, is continuous with the former (except in the West Indies, which are included in it), 'no other region,' says Mr. Wallace in his *Distribution of Animals*, 'can approach it in the number of its family and its generic types,' and in his more recent *Island Life*, he adds: 'Whether . . . we consider its richness in peculiar forms of animal life, its enormous variety of species, its numerous deficiencies as compared with other parts of the world, or the prevalence of a low type of organization among its higher animals, the Neotropical region stands out as undoubtedly the most remarkable of the great zoological divisions of the earth.'

As to its peculiarities, there is the same authority for stating that out of 168 families of vertebrates, 44 are peculiar; out of 130 genera of mammals, 103 or 79 per cent. are peculiar, while no other zoological region has more than 64 per cent. of mammalian genera peculiar to it; and out of 683 genera of birds (more than twice as many as in any other zoological region, though the Neotropical is one of the smallest in area), 576 or 84 per cent. are peculiar, while in this case also no other region has more than 64 per cent. peculiar.

To enter more into detail, among peculiar mammals are prehensile-tailed monkeys and marmosets, blood-sucking bats, coatimundis, peccaries, chinchillas, agoutis, sloths, armadillos, and certain ant-eaters, besides llamas and alpacas, the last two constituting the genus *Auchenia* (q.v.), interesting as the only genus of ruminants confined to South A., and also as being so widely separated from its nearest allies, the camels of the old world, with which, however, it is connected through the extinct camels of North A. Then among birds peculiar to this region there are the sugar-birds, or Cœrebidæ, an immense variety of tanagers, tree-creepers of the family Dendrocolaptidæ, and parrots (especially macaws); richly-colored chatterers, toucans, puff-birds, trumpeters, and 400 species of humming-birds. In its reptiles, amphibians, fresh-water fishes, and insects, the region is equally peculiar.

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No less characteristic, as above indicated, are the deficiencies of the region. The whole order of the Insectivora is wanting, except for a few species found in Central A. and the West Indies. The wide-spread family of the Viverridæ or civets is also absent; and there are no sheep, oxen, or antelopes in the native fauna. Then in the avian fauna there are none of the tits, shrikes, starlings, or pheasants of the old world; none of the sun-birds, bee-eaters, and rollers, so abundant in Africa. The low type of organization above referred to as characteristic of the higher animals of the region is shown by the predominance of edentates, marsupials, and rodents among the mammalia.

Like the flora the fauna of the West Indies is on the whole Neotropical in character, but the remoteness of the land connection of this archipelago with the mainland is shown by its extreme poverty in mammals. Great numbers of North American birds, however, migrate hither in winter.

The annexed tables, which show the political distribution of A., are compiled from the *Almanach de Gotha* (1886), the *Statistical Abstract* for the British colonies and other possessions, the *Census* of the United States (1880) and the like. The figures of population will be found in several cases to differ markedly from those usually given as the census populations. Thus the census of the United States as often given excludes 400,000 tribal Indians or more, who are not enumerated, but for the purposes of the present table require to be added. The last census of Canada includes the non-civilized Indians. On the other hand, the census population of Paraguay, 846,048, requires to have added to it 600,000 half-civilized and 700,000 wholly uncivilized Indians, in order to arrive at a notion of the total population. So in several other cases. For the Indians of America, see INDIANS, AMERICAN.

1. Governments of North America.

GOVERNMENTS.	Area in Square Miles.	Population.	Capitals.
Danish America (Greenland)....	46,740	9,752	Lichtenfels.
French Possessions (St. Pierre and Miquelon)	81	5,224	St. Pierre.
British North America—			
1. Dominion of Canada.....	3,620,510	4,750,000	Ottawa.
2. Newfoundland.....	40,200	161,389	St. John's.
3. Bermudas.....	41	14,888	Hamilton.
4. British Honduras.....	7,562	27,452	Belize.
United States of America (including tribal Indians).....	3,602,990	50,500,000	Washington.
Mexico	741,778	10,460,636	Mexico.
San Salvador.....	7,225	634,120	San Salvador.
Nicaragua	58,000	300,000	Managua.
Honduras	58,168	323,274	Comayagua.
Guatemala	44,800	1,322,544	Guatemala.
Costa Rica.....	21,495	213,785	San José.
Total	8,249,590	68,723,064	

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2. West Indian Governments.

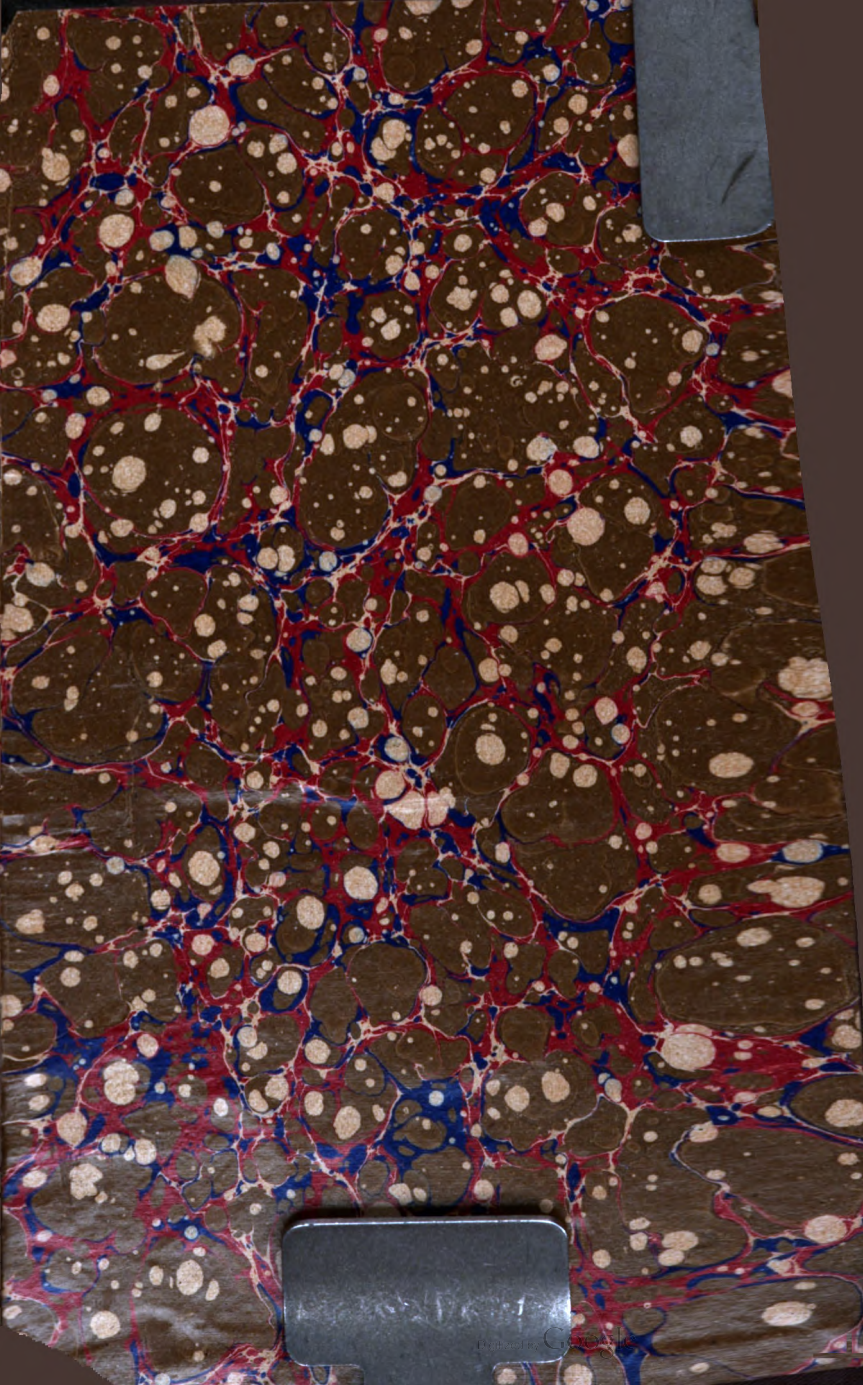
GOVERNMENTS.	Area in Square Miles.	Popula- tion.	Capitals.
Hayti { San Domingo..... }	9,500	572,000	Port au Prince
Dominica {	21,300	200,000	San Domingo.
Spanish—			
Cuba	72,000	1,521,684	Havana.
Porto Rico.....	3,720	754,313	San Juan.
British—			
Jamaica	4,193	580,814	Spanish Town
Trinidad	1,754	153,128	Port of Spain.
Barbadoes	166	171,860	Bridgetown.
Grenada (and the Grenadines).	133	42,403	St. George's.
St. Vincent	147	40,548	Kingston.
Tobago.....	114	18,051	Scarboro'.
St. Lucia	250	40,532	Castries.
Antigua	108	34,151	St. John's.
Montserrat	35	10,083	Plymouth.
St. Christopher and Anguilla..	103	41,001	Basseterre.
Nevis.....	50	11,864	Charlestown.
Virgin Islands.....	57	5,287	
Dominica	291	28,211	Roseau.
Bahamas and Turk's Island...	5,390	43,521	Nassau.
French—			
Guadalupe, etc.....	736	193,883	Basseterre.
Martinique	381	164,350	St. Pierre.
St. Bartholomew's.	8	2,898	Gustavia.
Dutch—			
St. Martin's, Curaçoa.....	452	42,530	Wilhelmstadt.
Danish—			
Santa Cruz, etc.....	73	33,763	Christianstadt.
St. Thomas	23		
St. John's	21		
Total	121,005	4,806,875	

3. Governments of South America.

Venezuela	439,119	1,639,398	Caracas.
Colombia.....	504,773	4,000,000	Santa Fé.
Ecuador	248,370	950,000	Quito.
Peru	432,297	3,050,000	Lima.
Bolivia	536,000	2,325,000	Chuquisaca.
Argentine Confederation.....	1,619,500	2,940,000	Buenos Ayres.
Uruguay.....	73,538	700,000	Montevideo.
Paraguay.....	91,980	346,048	Asuncion.
Chili	124,084	3,000,000	Santiago.
Brazil	3,288,000	12,333,375	Rio de Janeiro
Patagonia.....	350,000	4,000	
Guiana (British).....	85,000	257,473	Georgetown.
Guiana (Dutch)	46,060	70,000	Paramaribo.
Guiana (French).....	48,500	26,116	Cayenne.
Falkland Islands.....	6,500	1,532	Stanley.
Total	7,893,721	31,642,942	
Grand Total of America...	16,264,316	106,172,881	

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